

PARTS CATALOG

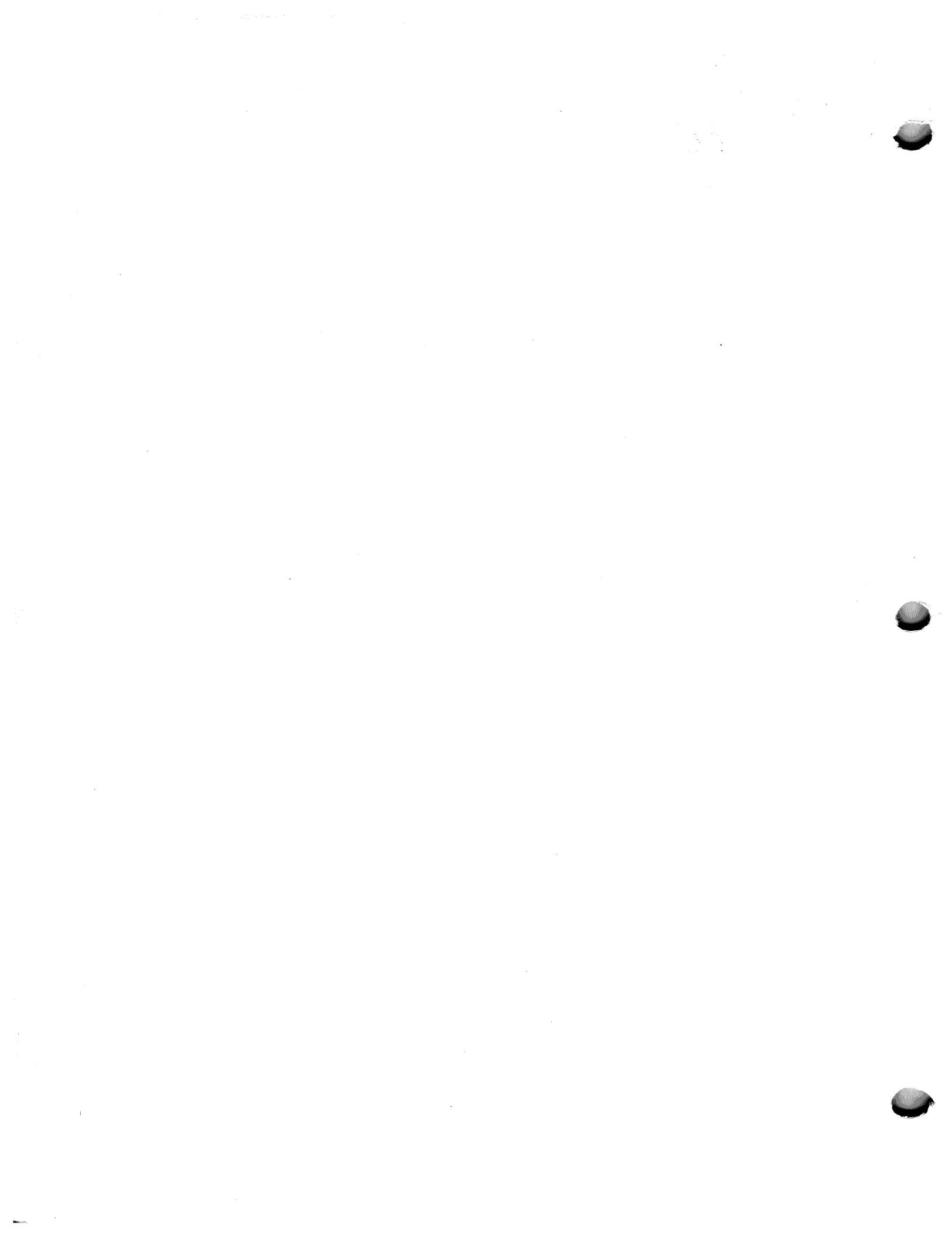
FOR

VICTOR
Custom

PRINTING CALCULATOR



VICTOR COMPTOMETER CORPORATION
BUSINESS MACHINES GROUP CHICAGO, ILLINOIS 60618
IN CANADA: VICTOR COMPTOMETER LIMITED • GALT, ONTARIO



CUSTOM LINE
PRINTING CALCULATOR



SECTION I
INTRODUCTION

1. This Parts Catalog covers the Custom Line Printing Calculators. The effective date of the information given is indicated by the date shown at the bottom of each page.

2. This Parts Catalog consists of three Sections, as follows:

a. Section I is the Introduction. It contains a description, and instructions for use of the remainder of the Catalog.

b. Section II is the Group Assembly Parts List. It contains illustrations of all parts used in the machines and a listing of parts and assemblies. These listings are complete except that all individual parts have not been listed or called out in assemblies that contain no replaceable parts.

(1) The illustrations are of the "exploded" type. That is, each part is moved away from the machine and associated parts, so that it can be clearly seen - yet, it is maintained in the same relative relationship to the machine and associated parts as it has in its assembled state. "Call out" numbers are included in these illustrations to identify the individual parts.

(2) An asterisk (*) following the part number indicates that the corresponding part or assembly is not individually replaceable in that location. If such a part or assembly is required for service, it should be ordered as a part of the next larger assembly that is replaceable. A letter (A, B, C, etc.) following the "call out" number indicates the part is not interchangeable with prior parts or a different part is used on the various models. The explanation is listed at the bottom of the page.

c. Section III is the Numerical Parts Index. It contains the part number and cross reference to the Group Assembly Parts Lists.

(1) The first column contains the part numbers. They are arranged in numerical sequence.

(2) The second column contains the Figure and Index Number that serves to identify the line in the Group Assembly Parts Lists on which this item appears, and the illustration in which it is called out.

USES

1. How to find a part or assembly number. If the appearance of the part or assembly - or its general location in the machine - is known, simply turn to the page where that item is illustrated and complete data, including part number, will be on the facing page, listed on the line opposite the call out number shown on the illustration.

2. How to identify the part or assembly when the number is known. Refer to the Numerical Parts Index in Section III of this catalog to obtain the figure and index number. Then turn to the illustration and Group Assembly Listing identified by that figure and index number.

3. How to find what parts are included in an assembly, or what assembly a part belongs to. If the assembly or part number is known, this data will be found as in "2" above. If the number is not known, but its general location in the machine is known, or its name, or its general appearance, it can be located by referring to the illustrations and/or parts listing.

4. Model 75-85-54 is used as the model for the illustrations in the Group Assembly Parts List.

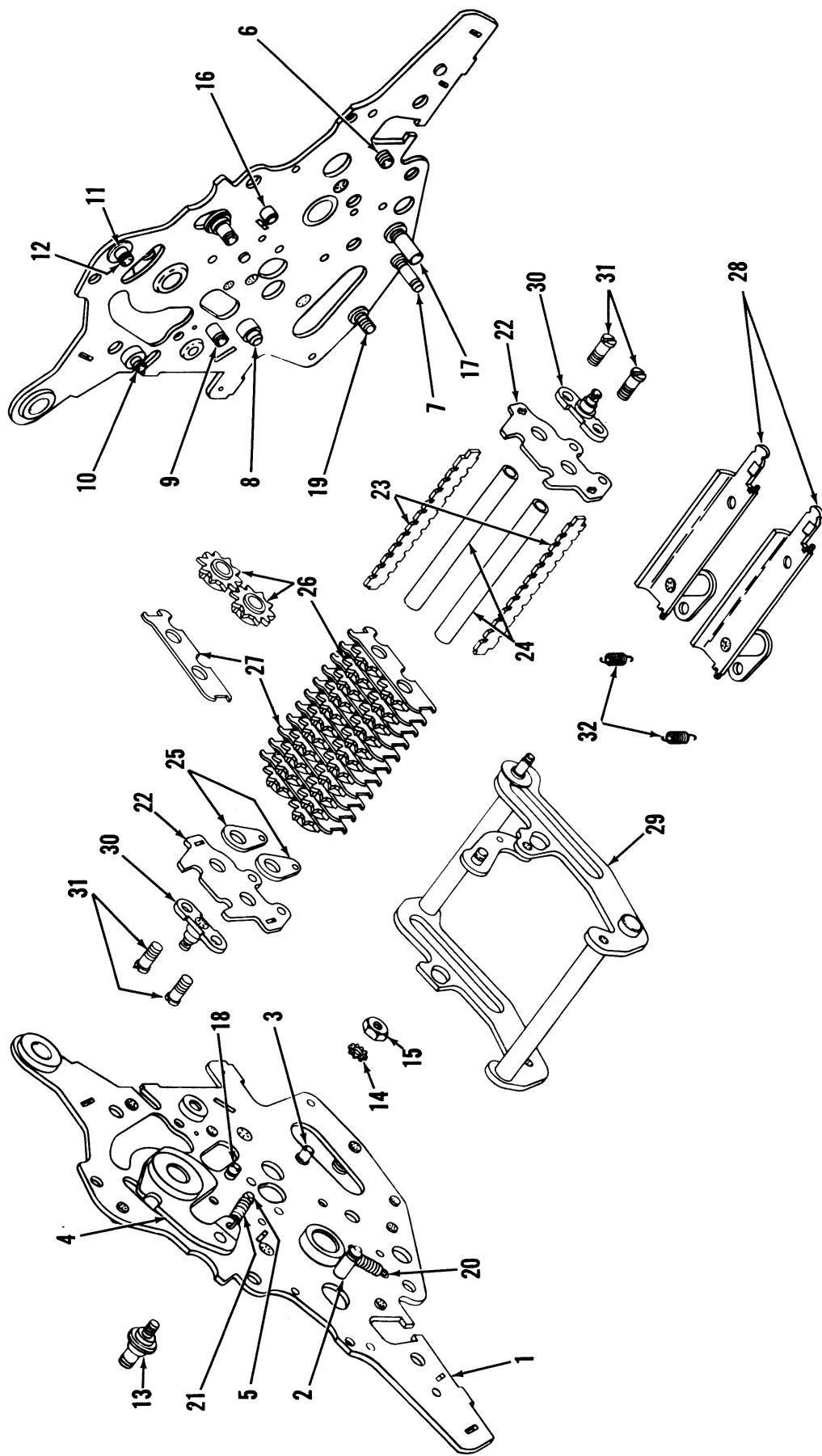


FIGURE 1

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Custom Printing Calculators Center Section Unit	Part Name								No. Req. per Assembly
			1	2	3	4	5	6	7	8	
1	1-13500	Custom Printing Calculators Center Section Unit									1
1	1-13543	Frame Assembly - Accumulator (Left)									1
1- A	9497 *	Frame - Accumulator									1
1- 1	7985	Stud - Spring									1
1- 2	8810 *	Stud - Shoulder									1
1- 3	5584 *	Crank - Rectifier									1
1- 4	293	Stud - Spring									1
1- 5	7989	Stud - Keeper (Signal Crank Pivot)									1
1- 6	7992	Stud - Shoulder Spring									1
1- 7	7986 *	Stud - Shoulder (Crank Assembly Pivot)									1
1- 8	7990	Stud - Keeper (Accumulator Detent Pivot)									1
1- 9	7980	Stud - Shoulder Keeper (Control Link Assembly)									1
1- 10	2362 ¹ ₂	Spacer - Flat (.020")									1
1- 11	8222	Stud - Keeper (Rectifier Pivot)									1
1- 12	8621	Stud - Shoulder Keeper									1
1- 13	4227	Washer - External Tooth Lock									1
1- 14	4209	Nut - Hex (.250")									1
1- 15	7987	Stud - (Subtract) Control Crank Pivot)									1
1- 16	12304 *	Stud - Shoulder Keeper									1
1- 17	7993	Stud - Spring									1
1- 18	13184	Stud - Spring Shoulder Keeper									1
1- 19	7063	Spring (.281", .011" Wire)									1
1- 20	M-289	Spring (.406", .012" Wire)									1
1- B	1-13139-1	Accumulator Assembly Complete									1
1- 22	7472	Plate - Accumulator Wheel Support									2
1- 23	8019	Comb - Accumulator Wheel Separator									2
1- 24	8020	Shaft - Accumulator Wheel									2
1- 25	13199	Retainer - Spring									2
1- 26	1-7378	Wheel Assembly Accumulator									22
1- 27	7382	Separator - Accumulator Wheel									11
1- 28 C	1-13200	Detent - Accumulator Wheel									2
1- 29 B	1-25011	Arm Assembly - Accumulator									1
1- 30	1-7380	Plate Assembly - Accumulator Wheel Guide									2
1- 31	7376	Screw - Flat Head (.270")									4
1- 32	5043	Spring (.218", .010" Wire)									2
<p>A - Frame #1-13543 is used on machines above serial #1824-096, or machines using #1-13506 Zero Eliminator Comb and #13000 series zero eliminator parts. Frame #1-13369 is used on machines between serial #1301-619 and #1824-096, or machines using #1-8031 Zero Eliminator Unit, #1-7723 & #1-7724 Adding Sectors. Frame #1-12934 is used on machines between these two serial numbers using #1-6457 & #1-6458 Adding Sectors. Frame #1-12523 is used on Multiplier Models below serial #1301-619.</p> <p>B - For machines below serial #2419-781, order #1-13139 Accumulator Assembly complete, or #1-8807 Accumulator Arms Assembly.</p> <p>C - For machines using #8021 Accumulator Wheel Detents, order two #1-13200 Accumulator Wheel Detents, two #13199 Spring Retainers, and two #5043 Springs when replacement of detent is required.</p>											

* This part, or assembly, is not individually replaceable in this location. Order the next higher assembly that is replaceable.

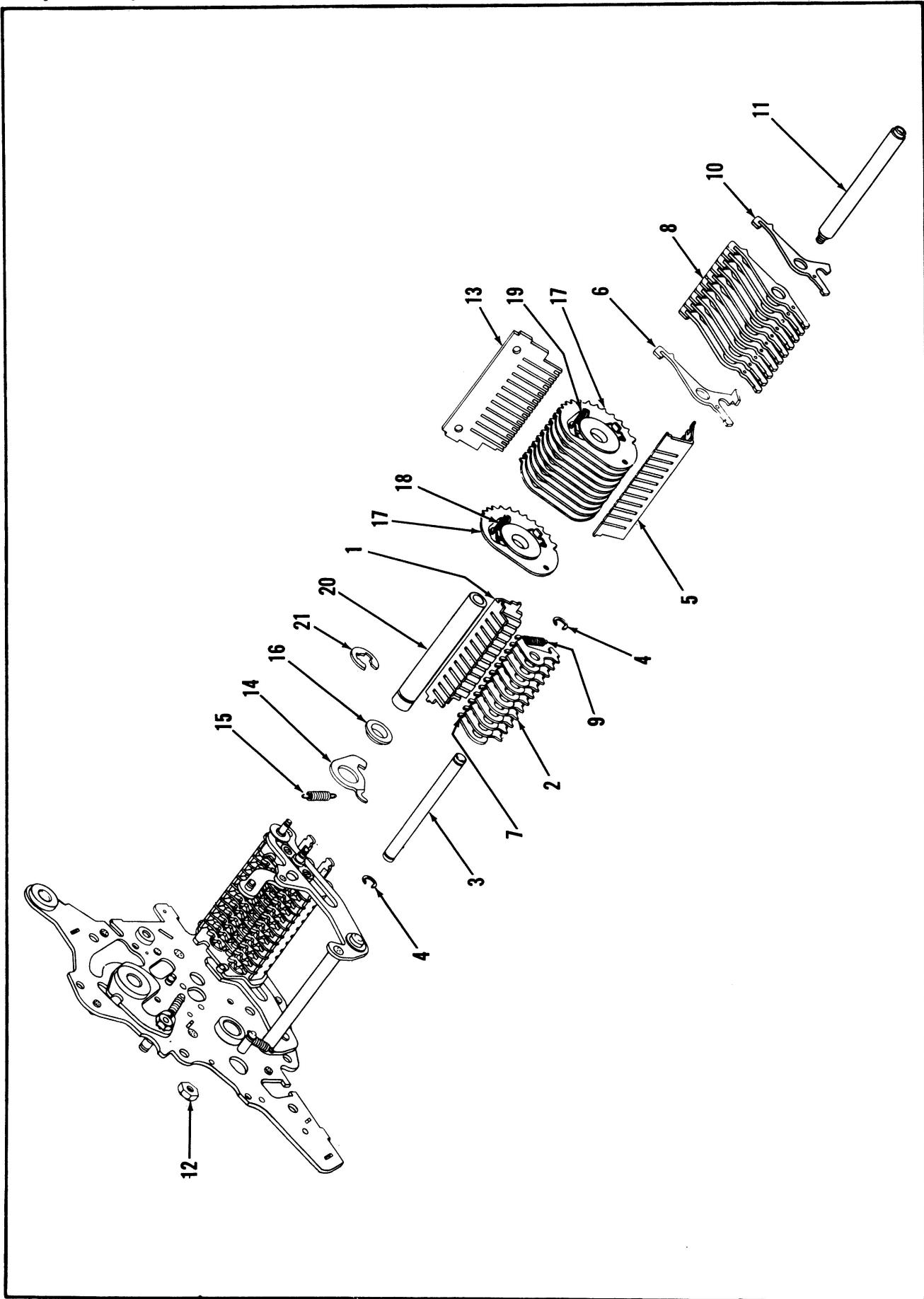


FIGURE 2

CUSTOM LINE
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Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
2- 1	8015			Comb - Carrying Pawl		Latch				1
2- 2	4628			Latch - Carrying Pawl						12
2- 3	7893			Shaft - Keeper (Carrying Pawl Latch)						1
2- 4	7894			Keeper - Spring						2
2- 5	8014			Comb - Carrying Pawl						1
2- 6	7423			Pawl - Credit Balance Carrying (Last Bank)						1
2- 7	5839			Spring - (.281", .011" Wire)						1
2- 8	4627			Pawl - Carrying						10
2- 9	F-781 $\frac{1}{2}$			Spring (.281", .010" Wire)						10
2-10	7424			Pawl - Credit Balance Carrying (First Bank)						1
2- 9	F-781 $\frac{1}{2}$			Spring (.281", .010" Wire)						1
2-11	8123			Shaft - Carrying Pawl						1
2-12	S-877 $\frac{1}{2}$			Nut - Hex (.312")						1
2-13	8016			Comb - Sector						1
2-14	7689			Detent - Accumulator Arm						1
2-15	4231			Spring (.486", .014" Wire)						1
2-16	7688			Sleeve - Detent						1
2 A	1-7723			Sector Assembly Complete - Adding (Last Bank Credit Balance)						1
2-17	1-7721			Sector Assembly - Adding						1
2-18	6454			Spring (.406", .010" Wire - Last Bank - Credit Balance)						1
2 A	1-7724			Sector Assembly Complete - Adding						10
2-17	1-7721			Sector Assembly - Adding						10
2-19	6459			Spring (.352", .011" Wire)						10
2-20	9211			Shaft - Sector						1
2-21	7691			Keeper - Spring						1

A - #1-7723 Adding Sector (Last Bank) and #1-7724 Adding Sectors are not individually interchangeable with the previous sectors #1-6457 (Last Bank) and #1-6458. The new style Sectors must be assembled as a complete set of eleven when replacing old style Sectors. Also, the #3919 Lask Bank Rack Guide Stud must be removed from the Left Accumulator Frame Assembly or the applicable Frame assembled. (See Note "A" in Figure 1). Adding Sectors #1-6457 & #1-6458 are no longer available.

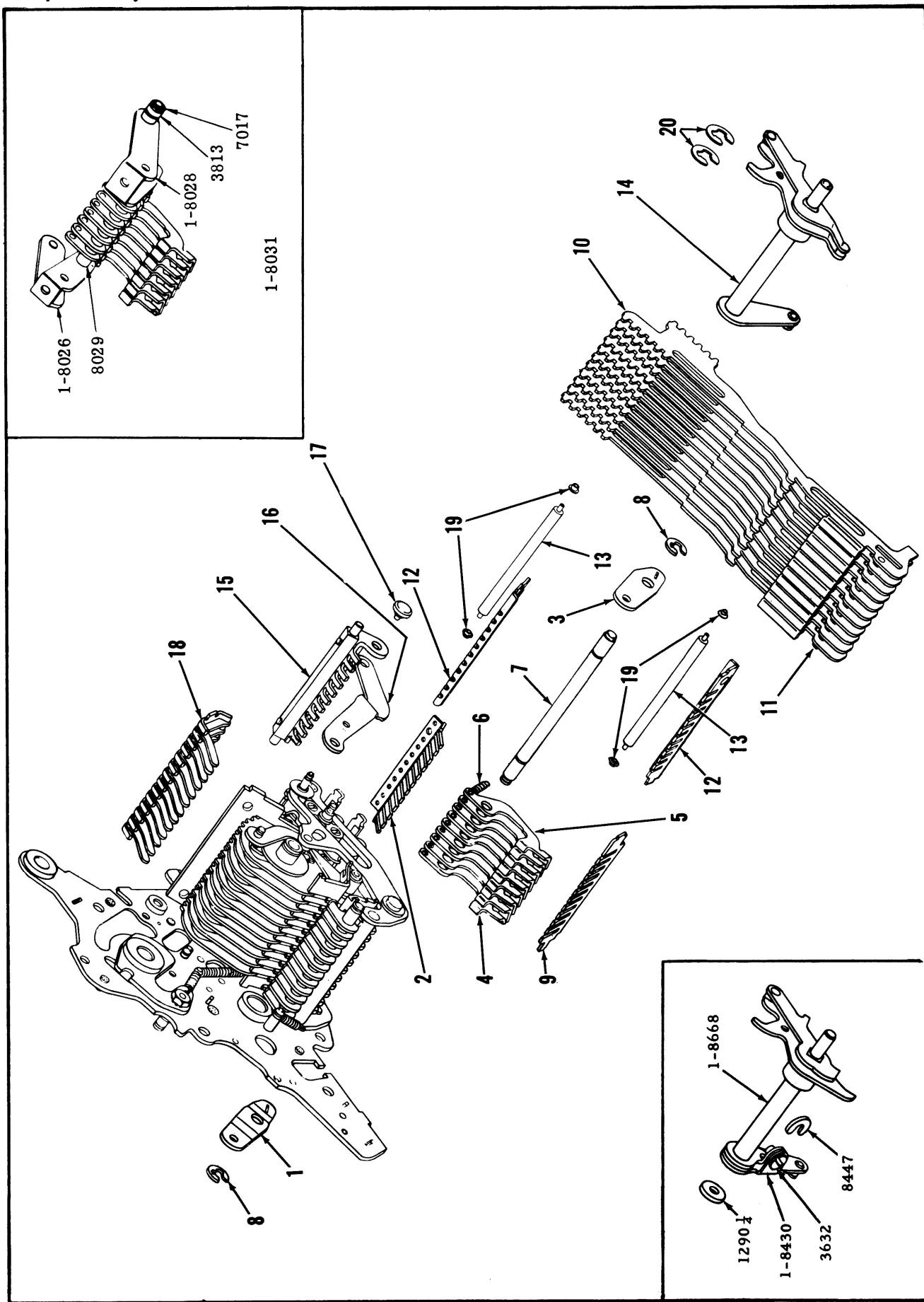


FIGURE 3

CUSTOM LINE
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Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
3 A	1-13506									1
3- 1 A	13503	Comb Assembly - Zero Eliminator								1
3- 2 A	13505	Arm - Zero Eliminator Comb (Left)								1
3- 3 A	13504	Comb - Zero Eliminator (Rear)								1
3- 4	5040	Arm - Zero Eliminator Comb (Right)								1
3- 5	5039	Zero Eliminator (Extra Bank)								1
3- 6	5043	Zero Eliminator (3rd to 10th Bank)								8
3- 7 A	13528	Spring (.218", .010" Wire)								9
3- 8	7019	Shaft - Zero Eliminator								1
3- 9	8011	Keeper - Spring (.187")								2
3- 10	1-12533	Comb - Zero Eliminator (Front)								1
3- 11	12253	Rack Assembly - Adding								11
3- 12	8012	Stud - Rack								11
3- 13 B	9346	Comb - Rack								2
3- 14 C	1-13588	Roller - Rack Guide								2
3- 15	1-8057	Shaft Assembly - Signal Arm								1
3- 16	6932	Plate Assembly - Carrier Restore Shaft								1
3- 17	7883	Link - Carrier Restore								1
3- 18	1-8067	Rivet - Shoulder								1
3- 19	9347	Comb Assembly - Type								1
3- 20	7020	Bearing - Rack Roller Guide								4
		Keeper - Spring (.250")								2
<p>A - All Zero Eliminator parts marked "A" are used on machines above serial #1824-096 and are not interchangeable with prior parts contained in Zero Eliminator Unit #1-8031 (Illustrated at left)</p> <p>B - Rack Guide Roller #8069 is used in machines below serial #2087-050, or machines that do not use Rack Guide Roller Bearing #9347. To replace Rack Guide Roller #8069, order Rack Guide Roller #9346 and two Rack Guide Roller Bearings #9347.</p> <p>C - Signal Arm Shaft 1-13588 is used in machines above serial #2148-792, or machines using 1-13590 Intermediate Lever. Signal Arm Shaft 1-8668 was used on machines below this serial number, or machines using #1-13513 Intermediate Lever; and is not available. Order #1-13588 Signal Arm Shaft and #1-13590 Intermediate Lever, if #1-8668 requires replacement. (See illustration in box)</p>										

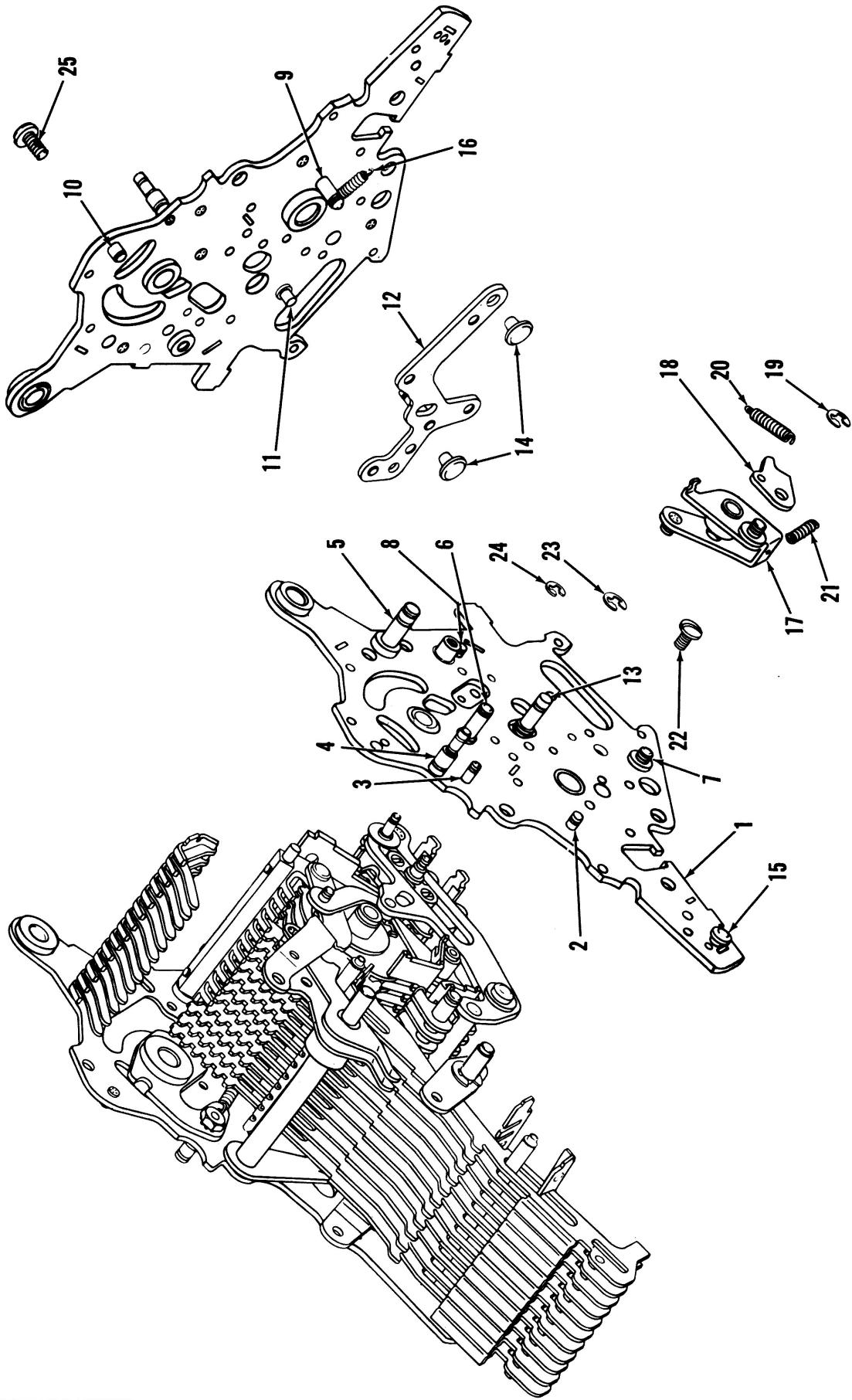


FIGURE 4

CUSTOM LINE
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Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
4 A	1-13545-1	Frame Assembly - Accumulator (Right)								1
4- 1	9498 *	Frame - Accumulator (Right)								1
4- 2	7995	Stud - Spring								1
4- 3	7331 *	Stud - Keeper (Total Control Lever Pivot)								1
4- 4	5742 *	Stud - Special								1
4- 5	7996 *	Stud - Shoulder Keeper (Carriage Lock Pivot)								1
4- 6	9282 *	Stud - Shoulder Keeper (Selector Plate Pivot)								1
4- 7	5811 *	Stud - Shoulder Keeper								1
4- 8	25112	Stud - Keeper Spring								1
4- 9	7985	Stud - Spring								1
4-10	7994	Stud								1
4-11	8810 *	Stud - Shoulder								1
4-12 B	1-17006	Arm Assembly - Accumulator Wheel Control								1
4-13	8216	Stud - Shoulder Keeper (Accumulator Selector Pivot)								1
4-14	13509	Rivet - Shoulder								2
4-15	12252	Stud - Locating Calculating Frame								1
4-16	7063	Spring (.281", .011" Wire)								1
4-17	1-8058	Crank Assembly - Carrier Restore								1
4-18	3676	Pawl - Restore Bar (A Short Pawl, Part #4044 Marked with an "O" A Long Pawl, Part #4045 Marked with an "+" and an Extra Long Pawl, Part #7411 Marked with a "◇" are Available as Adjustment Parts).								1
4-19	7018	Keeper - Spring (.156")								1
4-20	3547	Spring (.187", .008" Wire)								1
4-21	F-781 $\frac{1}{2}$	Spring (.281", .010" Wire)								1
4-22	3632	Screw - Binding Head (.187")								1
4-23	7018	Keeper - Spring (.156")								1
4-24	7017	Keeper - Spring (.125")								1
4-25	9457	Screw - Nylock								1
<p>A - Frame #1-13545-1 is used in machines above serial #2419-781. For machines below serial #1824-096, order #1-13545 Frame.</p> <p>B - Accumulator Wheel Control Arm 1-17006 is used on machines above serial #2419-781 or with Frame #1-13545-1. For machines between serial #1824-096 and #2419-781 Accumulator Wheel Control Arm #1-13508 is used, or with Frame #1-13545. Order #1-8215 Accumulator Wheel Control Arm for machines below serial #1824-096.</p>										

* This part, or assembly, is not individually replaceable in this location. Order the next highest assembly that is replaceable.

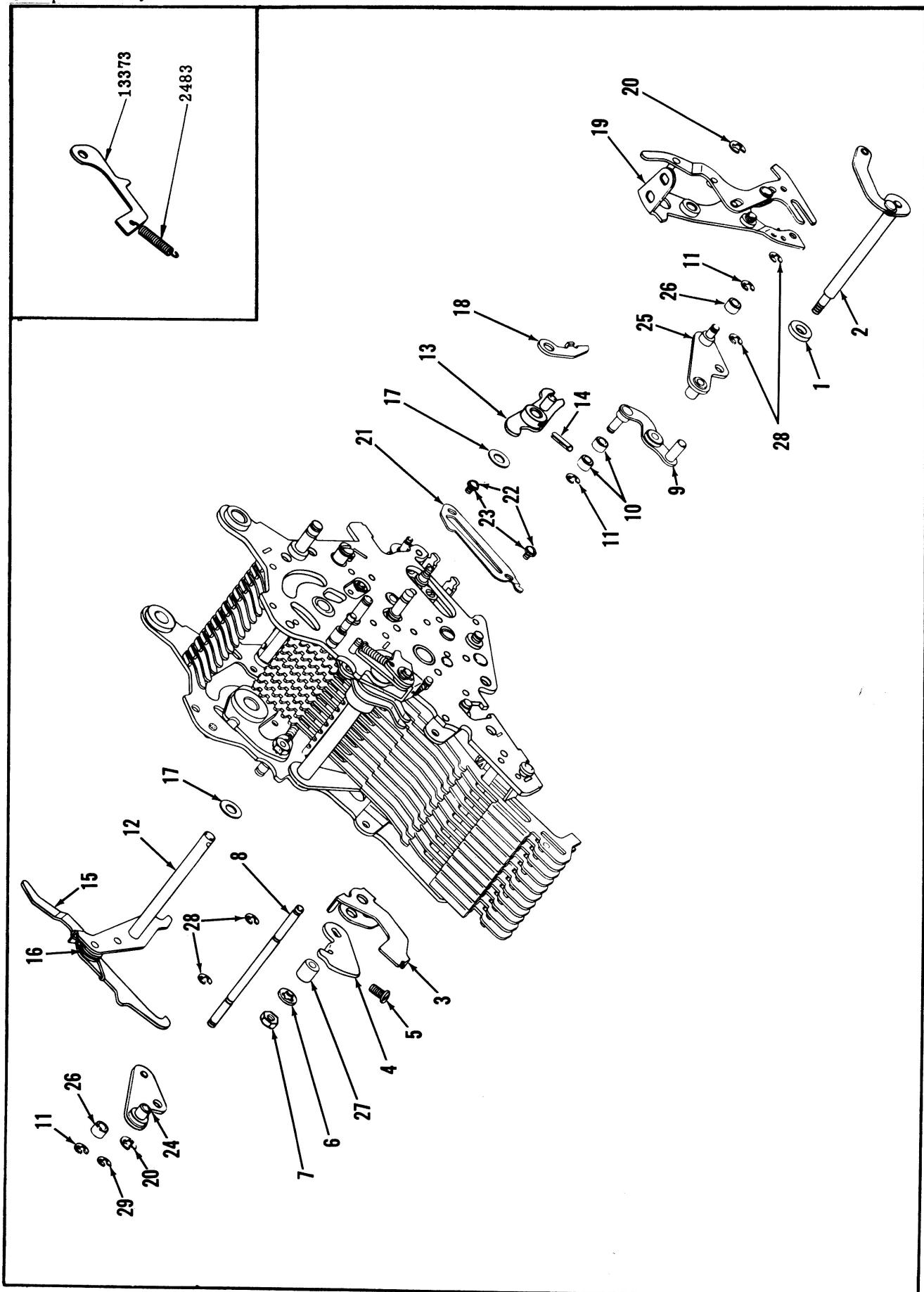


FIGURE 5

CUSTOM LINE
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Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
5- 1	1416 ¹ ₄	Spacer - Flat (.083")								1
5- 2 A	1-13523	Shaft Assembly - Total Lock (1-8065)								1
5- 3 A	13530	Arm - Rack Stop Plate Raising (See Note)								1
5	1-6988	Arm Assembly - Total Lock								1
5- 4	5939	Arm - Total Lock								1
5- 5	9829	Screw - Fillister Head (.343")								1
5- 6	1498 ¹ ₂	Washer - Internal Tooth Lock								1
5- 7	2101 ¹ ₄	Nut - Hex (.250")								1
5- 8 A	13529	Shaft - Zero Eliminator Pivot (8121)								1
5- 9	1-13590	Lever Assembly - Intermediate (1-8454)								1
5-10	3813	Roller (.218") (These Five Rollers are used								2
5-10	3108	Roller (.1875") in place of #3813 to adjust								AR
5-10	8609	Roller (.203") positioning of the signal								AR
5-10	3883	Roller (.229") type sector on a subtract								AR
5-10	3885	Roller (.250") operation).								AR
5-10	3786	Roller (.270")								AR
5-11	7017	Keeper - Spring (.125")								3
5	1-8510	Arm and Shaft Assembly Complete - Accumulator								1
5-12	1-25185 *	Arm and Shaft Assembly - Accumulator								1
5-13	1-5941 *	Arm Assembly - Accumulator (Right)								1
5-14	4213	Roll Pin (5/64" x 3/8")								1
5-15	8509 *	Link - Accumulator								1
5-16	25184	Spring - Torsion								1
5-17	7690	Spacer - Flat (.005")								2
5-18	7645	Lever - Accumulator Arm Intermediate								1
5-19 A	1-13518	Lever Assembly Complete - Total Control (1-7648)								1
5-20	7018	Keeper - Spring (.156")								2
5-21	9344	Block - Accumulator Detent								1
5-22	F-769 ¹ ₂	Screw - Round Head (.125")								2
5-23	7463	Washer - Internal Tooth Lock								2
5-24 A	1-13516	Arm Assembly - Left Zero Eliminator (1-8026)								1
5-25 A	1-13525	Arm Assembly - Right Zero Eliminator (1-8028)								1
5-26	3813	Roller (.218")								2
5-27	13531	Spacer - Tubular (.250")								1
5-28	7017	Keeper - Spring (.125")								4
5-29	7621	Keeper - Spring								1

A - All parts listed are used on machines above serial #1824-096 or machines using #13000 series Zero Eliminator Part Numbers. Part numbers listed in brackets are used on machines below this serial number or machines using #1-8031 Zero Eliminator Unit illustrated in Figure 3.

Rack stop plate rising arm #13530 replaced #5938 and rack stop raise lever #13373 (illustrated at left) at serial #1824-096. Rack raise lever #13373 replaced #12827 at serial #1687-709 and is used with calculating cam shaft #1-13376. Rack raise lever #12827 is used between serial #1124-396 and #1687-709. Rack stop raise lever #12058 is used below serial #1124-396.

* This part, or assembly, is not individually replaceable in this location. Order the next highest assembly that is replaceable.

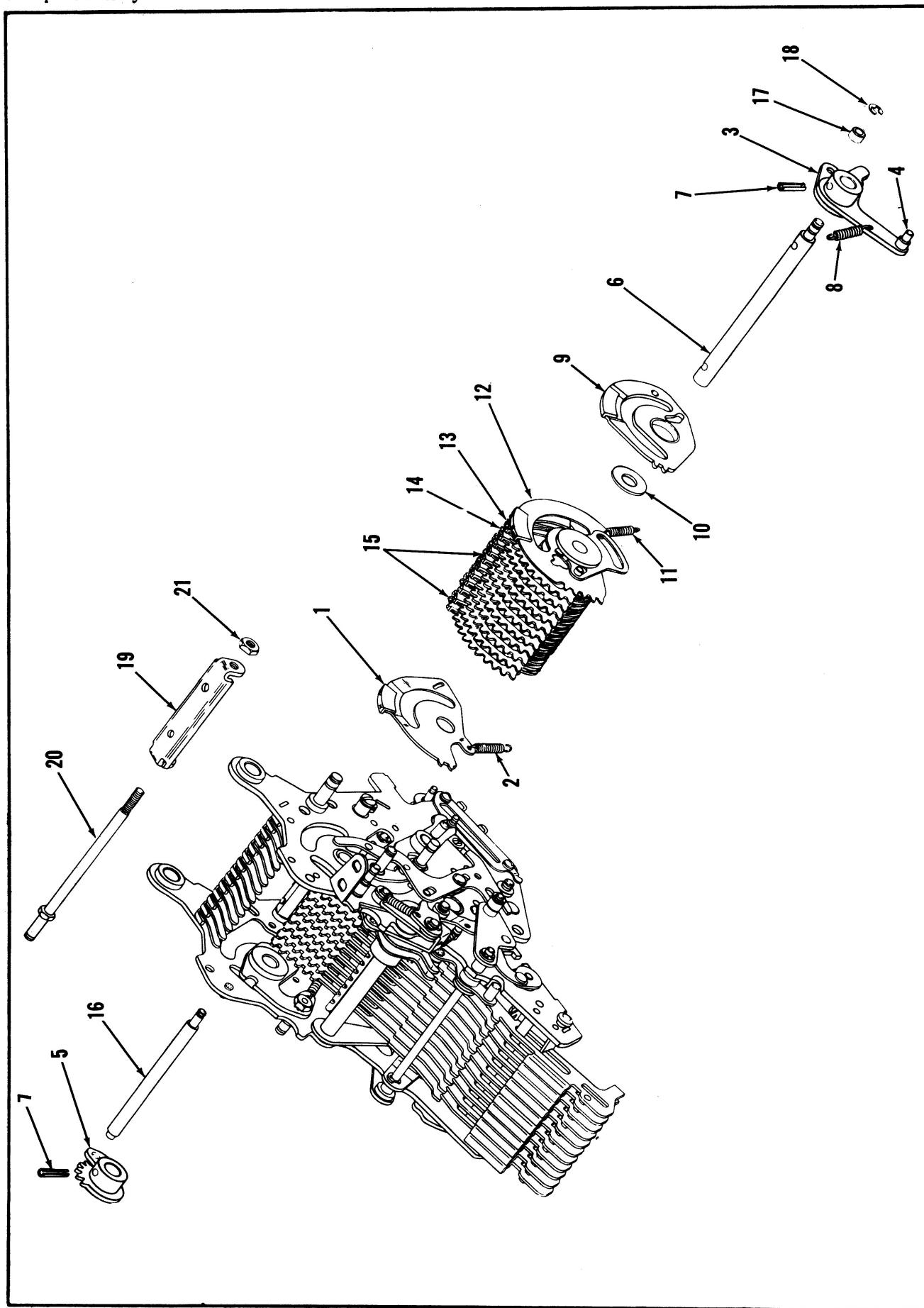


FIGURE 6

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
6- 1 A	1-9735									1
6- 2	6733									1
6- B	1-17020									1
6- 3	1-17019 *									1
6- 4	3814									1
6- 5	1-4066 *									1
6- 6	8862 *									1
6- 7	4211									1
6- 8	7972									2
6- 9 A	1-9745									1
6- 10	7410									1
6- 11	5511									1
6- 12 A	1-9715									1
6- 13 A	1-9625									8
6- 14 A	1-9655									1
6- 15 A	1-9675									2
6- 16	8122									1
6- 17	3813									1
6- 18	12575									1
6- 19	8010									1
6- 20	12612									1
6- 21	4798									1
<p>A - For machines below serial #2020-241 order the following Type Sectors:</p> <p>#1-12936 Multiply and Divide #1-7355 Credit Balance Signal #1-8119 Total, Sub-Total, Non-Add Signal #1-5550 Numerical #1-5553 Numerical-Period #1-5555 Numerical-Comma For Multiplier Model below serial #1301-619, order #1-12421 Multiplication Type Sector.</p> <p>B - For machines below serial #2419-781, order #1-8865 Type Sector Shaft Assembly.</p>										

* This part, or assembly, is not individually replaceable in this location. Order the next highest Assembly that is replaceable.

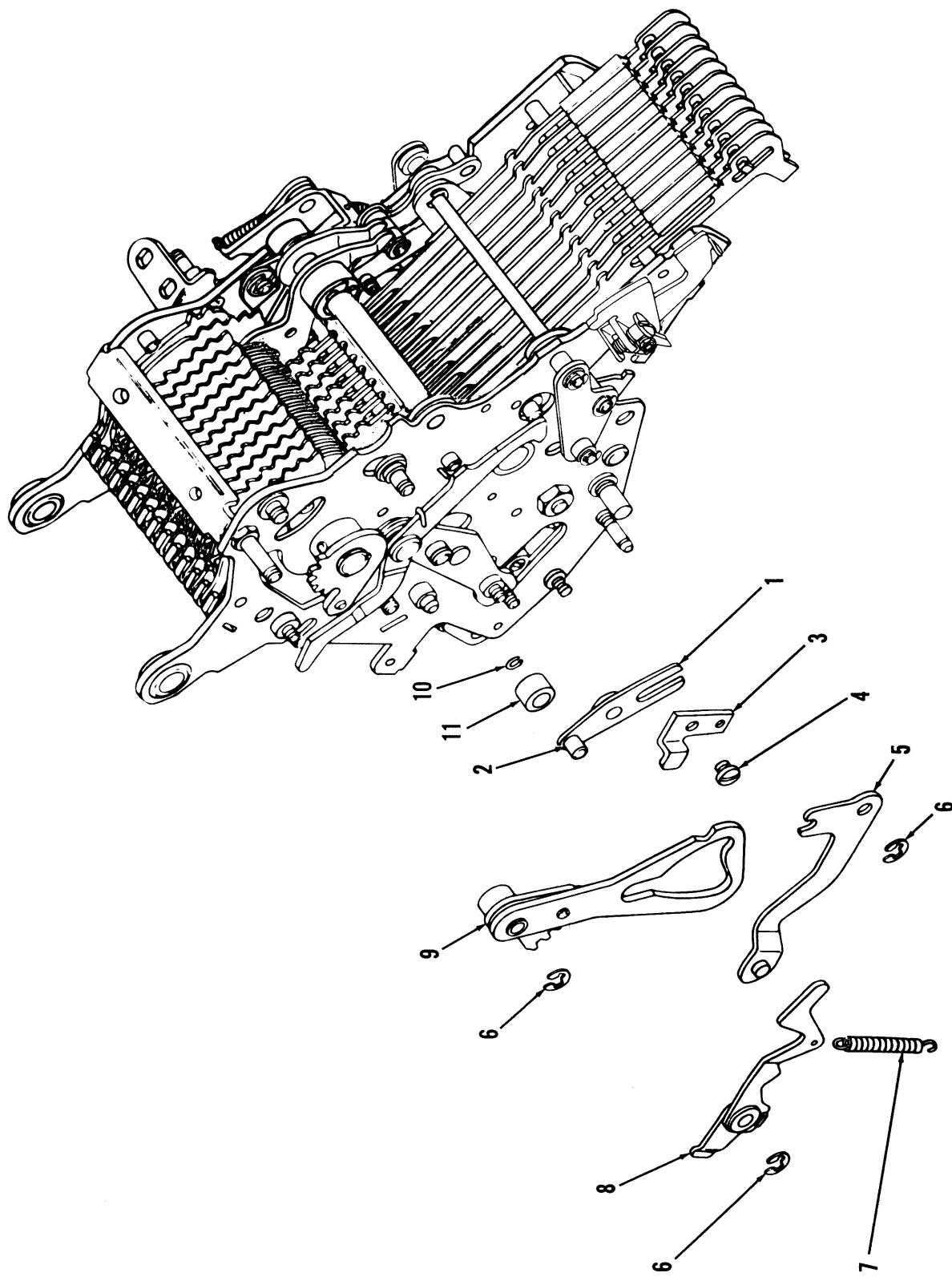


FIGURE 7

CUSTOM LINE
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Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
7- 1	1-7433			Crank Assembly - Subtract Control						1
7- 2	3609			Stud						1
7- 3	5011			Retainer - Control Crank						1
7- 4	3781			Screw - Binding Head (.115")						1
7- 5	1-4805			Crank Assembly - Signal						1
7- 6	7018			Keeper - Spring (.156")						3
7- 7	3376			Spring (1", .016" Wire)						1
7- 8	1-5946			Detent Assembly - Accumulator						1
7- 9	1-7150			Cam and Sector Assembly - Rack						1
7-10	5527			Spring - Retainer						1
7-11	5525			Roller - Counterbore (.344") (Adjustment Rollers #5524 (.358") #5526 (.328") and #5996 (.373")						1

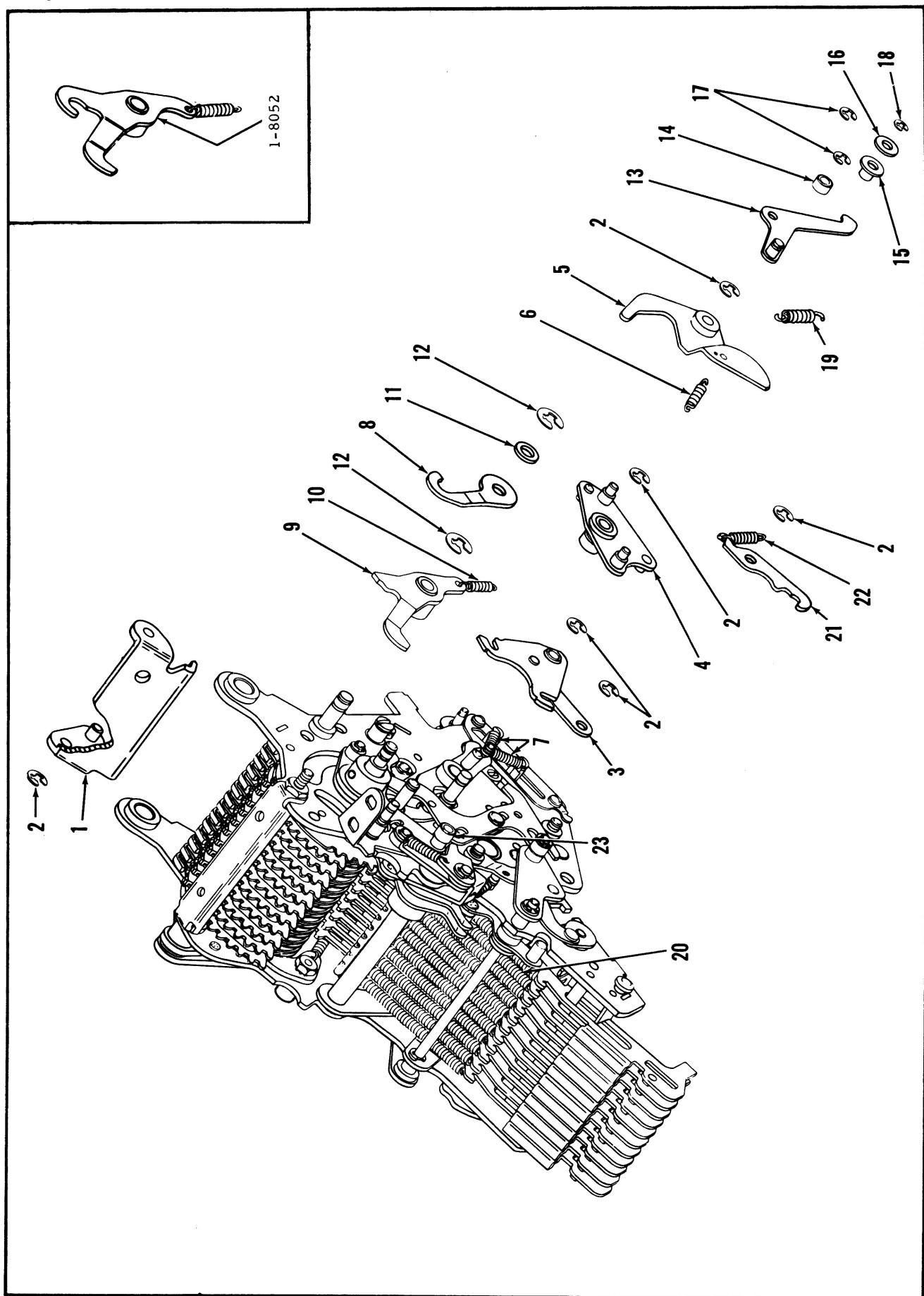


FIGURE 8

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
8- 1	1-8039	Rectifier Assembly								1
8- 2	7018	Keeper - Spring (.156")								6
8- 3 A	1-7939	Selector Assembly - Accumulator								1
8- 4	1-7361	Selector Plate Assembly - Accumulator								1
8- 5	1-7973	Crank Assembly - Non-Add and Sub- Total								1
8- 6	M-289	Spring (.406", .012" Wire)								1
8- 7	5043	Spring (.218", .010" Wire)								2
8- 8 B	25349	Lock - Carriage Limit								1
8- 9 B	1-25356	Lock Assembly - Carriage								1
8-10 B	9455	Spring (.520", .020" Wire)								1
8-11 B	S-966	Spacer - Flat (.048")								1
8-12	7019	Keeper - Spring (.1875")								2
8-13	1-17025	Swinging Frame Lock Assembly (Lower)								1
8-14	3813	Roller (.218")								1
8-15	25006	Roller - Accumulator Arm (Right)								1
8-16	F-1846 ₁ ²	Spacer - Flat (.035")								1
8-16	8434	Spacer - Flat (.042")								AR
8-16	25012	Spacer - Flat (.028")								AR
8-17	7017	Keeper - Spring (.125")								2
8-18	12575	Keeper - Spring								1
8-19	2483	Spring (.468", .010" Wire)								1
8-20	4563	Spring (1", .013" Wire - Rack Springs)								11
8-21	7368	Detent - Credit Balance								1
8-22	F-2689	Spring (.281", .013" Wire)								1
8-23	3813	Roller (.218")								1

A - Accumulator Selector #1-7340 was used on machines below serial #2122-973 to replace order #1-7939 Selector and #1-7361 new Style Accumulator Selector Plate.

B - Carriage Lock #1-25356 and Lock Limit #25349 superseded Carriage Lock #1-8052 (see illustration in box). To replace lock #1-8052, order all parts with a "B" indication.

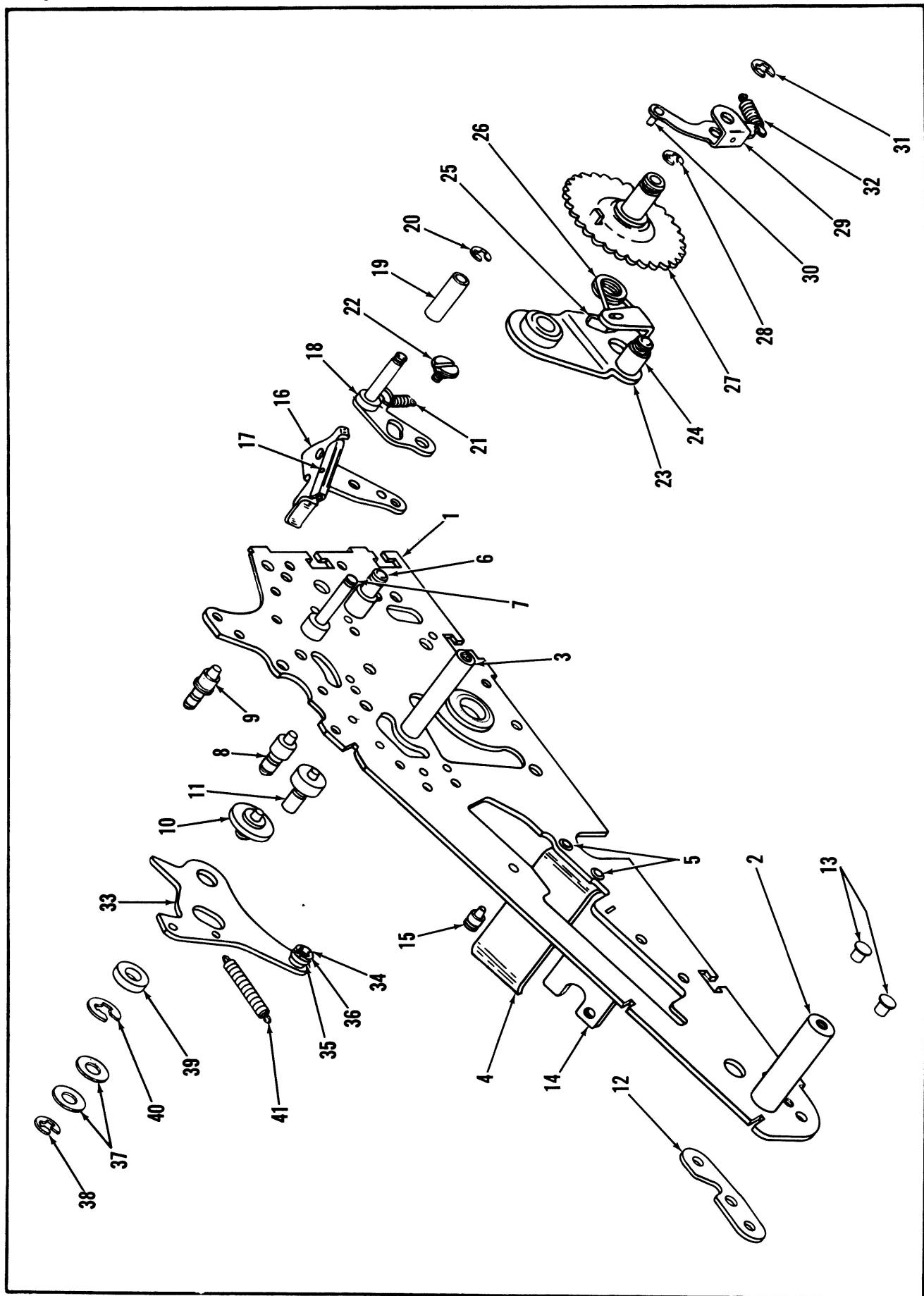


FIGURE 9

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
9 A	1-13327	Frame Assembly - Control (Right)								1
9-1	9018 *	Frame - Control (Right)								1
9-2	8367	Post - Rivet								1
9-3	12024	Post - Rivet								1
9-4	4343	Plate - Rack Stop Restoring								1
9-5	2901	Rivet - Round Head								2
9-6	5871	Stud - Shoulder Spring								1
9-7	5865	Stud - Shoulder Keeper (Ribbon Spool Post)								1
9-8	8606	Stud - Shoulder Keeper Spring								1
9-9	8906	Stud - Shoulder Keeper Spring								1
9-10	8365	Stud - Double Shoulder Keeper								1
9-11	3752	Stud - Double Shoulder								1
9-12	12104	Bracket - Auto-Total Selection Dog Shaft								1
9-13	2901	Rivet - Round Head								2
9-14	6042 *	Bracket - Key Guide Plate Support								1
9-15	1293	Stud - Spring								1
9	1-9285 *	Bracket Assembly - Ribbon Guide (Right)								1
9-16	5859	Bracket - Ribbon Guide								1
9-17	4143	Clip - Ribbon Guide Bracket								1
9	1-9284	Arm Assembly - Ribbon Tension Guide Complete								1
9-18	1-9283	Arm Assembly - Ribbon Tension Guide								1
9-19 B	9486	Roller - Ribbon Guide								1
9-20 B	7017	Keeper - Spring (.125")								1
9-21	5511	Spring (.203", .007" Wire)								1
9-22	7152	Screw - Shoulder (.174")								1
9-23	1-12407	Arm Assembly - Ribbon Feed								1
9-24	12250	Stud - Shoulder Keeper								1
9-25	5583	Pawl - Ribbon Feed Pawl (Right)								1
9-26 C	6293	Spring - Torsion								1
9-27	1-5842	Ratchet Assembly - Ribbon Feed								1
9-28	7017	Keeper - Spring (.125")								1
9-29	1-15096	Detent Assembly - Ratchet								1
9-30	12110	Stud - Ratchet Detent								1
9-31	7018	Keeper - Spring (.156")								1
9-32	3699	Spring (.468", .014" Wire)								1
9-33	1-7884	Lock Assembly - Total Key								1
9-34	5926	Stud - Keeper								1
9-35	3884	Roller - Shoulder								1
9-36	7017	Keeper - Spring (.125")								1
9-37	S-8561 ₂	Spacer - Flat (.015")								2
9-38	7018	Keeper - Spring (.156")								1
9-39	1416 ₁ ₂	Spacer - Flat (.083")								1
9-40	7019	Keeper - Spring (.1875")								1
9-41	4368	Spring (.625", .008")								1
<p>A - Control Frame #1-13327 is used on machines above serial #1532-929. For machines below this serial number, order #1-12524 frame.</p> <p>B - Order #5858 Ribbon Guide Roller for machines using a #7018 Spring Keeper to secure roller.</p> <p>C - Order #5847 Ribbon Feed Pawl Spring for machines below serial #1929-801.</p>										

* This part, or assembly, is not individually replaceable in this location. Order the next highest assembly that is replaceable.

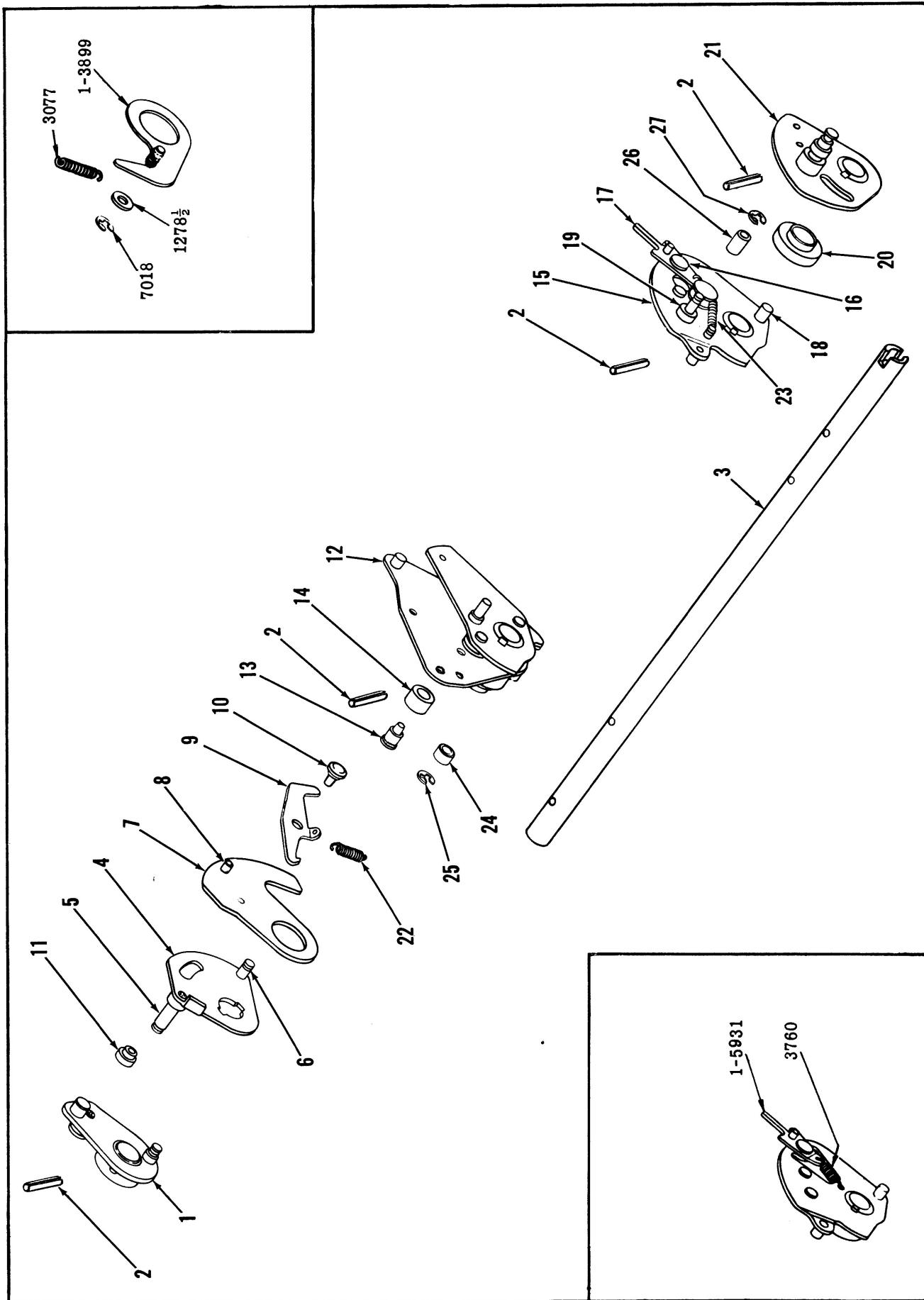


FIGURE 10

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
10- A	1-13242	Main Shaft Assembly - Custom Printing Calculators								1
10- 1	1-12227 *	Crank Assembly Complete - Drive								1
10- 2	4214	Roll Pin (1/8" x 5/8")								4
10- 3	12780 *	Shaft - Main								1
10	1-12961	Arm Assembly Complete								1
10- 4	1-4862 *	Arm Assembly - Key Lock Cam								1
10- 5	5768 *	Stud - Shoulder Keeper								1
10- 6	2363 $\frac{1}{2}$	Stud - Spring								1
10- 7	4681 *	Cam - Key Lock								1
10- 8	2229	Stud								1
10- 9	4683	Pawl - Key Lock Cam								1
10-10	4684	Rivet - Shoulder								1
10-11	4685	Spacer - Shoulder								1
10-12	1-12959 *	Arm Assembly - Rack Cam								1
10-13	8866	Rivet - Shoulder								1
10-14	8867	Roller - Counterbore (.312")								1
10-15	1-13217 *	Arm Assembly - Accumulator Control Pawl								1
10-16	5815	Rivet - Shoulder								1
10-17 B	1-13104	Pawl Assembly - Accumulator Control								1
10-18	12635	Stud - Printing Link Pivot								1
10-19	13216	Stud - Keeper								1
10-20	12271	Spacer - Right Printing Link Stop Collar								1
10-21 C	1-13542 *	Sector Assembly Complete - Governor								1
10-22	585	Spring (.343", .014" Wire)								1
10-23 B	9610	Spring (.715", .011" Wire)								1
10-24	3813	Roller (.218")								1
10-25	7017	Keeper - Spring (.125")								1
10-26 D	13496	Roller - Tubular (.225")								1
10-27	12575	Keeper - Spring								1
<p>A - Order #1-13242 Main Shaft for machines above serial #1435-374 for machines not employing #1-3899 Total Key Lock (illustrated in box). For machines above the serial number using #1-3899 Lock, order #1-13221 Main Shaft. For Machines between serial #1435-374 and #1696-780, also order #13496 Roller and #12575 Spring Keeper. For machines below serial #1435-374, order #1-13214 Non-Add Cam Control Lever, #13496 Roller and #12575 Spring Keeper.</p> <p>B - #1-13104 Accumulator Control Pawl and #3541 Spring cannot be used in place of #1-5931 Accumulator Control Pawl and #3760 Spring formerly used in this location. Pawl #1-5931 and #3760 Spring illustrated at left.</p> <p>C - Total Key Lock Hook #1-3899, Spacer #1278$\frac{1}{2}$ and Spring #3077 (illustrated at left) were formerly used to restore the Total Key Lock #1-7884.</p> <p>D - Roller #13496 is used on machines above serial #1435-374. For machines below this serial number using a Roller, order Roller #7347.</p>										

* This part, or assembly, is not individually replaceable in this location. Order the next highest assembly that is replaceable.

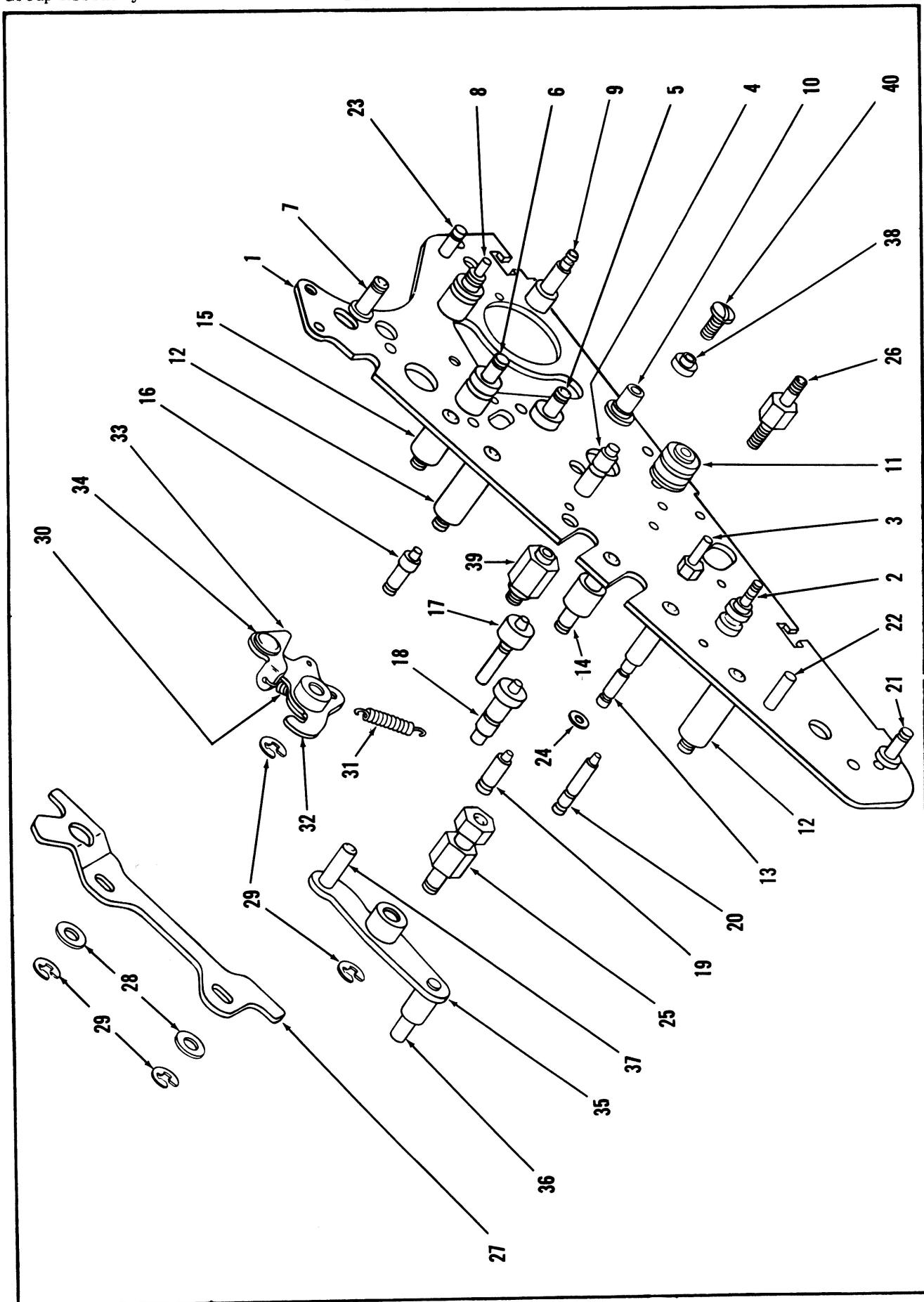


FIGURE 11

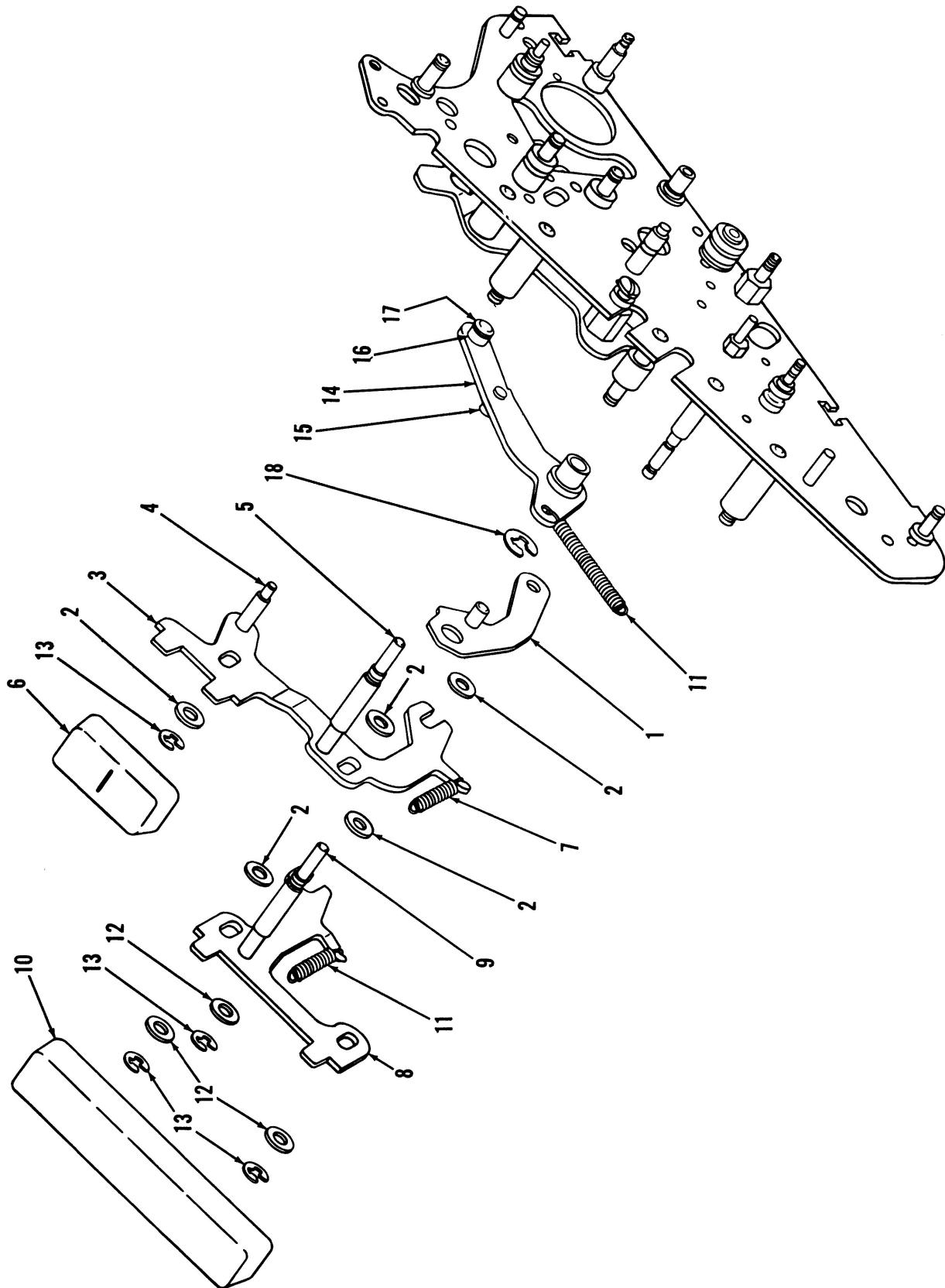
CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
11 A	1-13597	Frame Assembly - Outer Right								1
11- 1	8200 *	Frame - Outer Right								1
11- 2	12917	Stud - Keeper								1
11- 3	12972 *	Stud - Eccentric								1
11- 4	12913	Stud - Locator								1
11- 5	12320	Stud - Shoulder Keeper								1
11- 6	13156	Stud - Keeper								1
11- 7	8272 *	Stud - Shoulder Keeper								1
11- 8	9171	Stud - Double Shoulder (Spring Keeper)								1
11- 9	13596	Stud - Shoulder								1
11-10	12915	Stud - Shoulder								1
11-11	12274	Stud - Shoulder								1
11-12	8741	Stud								2
11-13	8271	Stud - Spring								1
11-14	8742	Stud - Shoulder Keeper								1
11-15	13249	Stud - Shoulder Keeper (Interlock Slide)								1
11-16	8267	Stud - Shoulder Keeper								1
11-17	8268	Stud - Shoulder Spring								1
11-18	8273	Stud								1
11-19	8263	Stud - Keeper								1
11-20	8269	Stud - Spring								1
11-21	12916	Stud - Keeper								1
11-22	2873	Stud - Tabulating Stop								1
11-23	3581	Stud - Spring								1
11-24	12971 *	Spacer - Flat								1
11-25	12266	Stud - Shoulder Keeper								1
11-26	12928	Stud - Screw								1
11-27	8299	Slide - Interlock Non-Add Key								1
11-28	8325	Spacer - Flat (.025")								2
11-29	7018	Keeper - Spring (.156")								4
11-30	4351	Spring (.375", .008" Wire)								1
11-31	S-982	Spring (.843", .010" Wire)								1
11-32	1-8340	Latch Assembly - Minus Key								1
11-33	8334	Pawl - Minus Key Release								1
11-34	8335	Rivet - Shoulder								1
11-35	1-8306	Lever Assembly - Motor Trip								1
11-36	8302	Stud - Shoulder								1
11-37	8304	Stud - Motor Trip Crank Operating								1
11-38	13168	Bearing - Stop Key								1
11-39	12925	Stud - Shoulder Keeper								1
11-40	7077	Screw - Binding Head (.281")								1

A - Frame #1-13597 is used on machines above serial #2307-030 (#12292 Motor Contact Latch Secured by a Keeper) Frame #1-13329 is used on machines between serial #1532-929 and #2307-030. Frame #1-13157 is used on machines between serial #1419-300 and #1532-929. Frame #1-12526 is used on machines between serial #1301-619 and #1419-300. Frame #1-12771 is used on machines below serial #1301-619.

* This part, or assembly, is not individually replaceable in this location. Order the next highest assembly that is replaceable.



CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
12- 1	1-8290									1
12- 2	S-288 $\frac{1}{2}$									5
12- 3	1-12449									1
12- 4	8317									1
12- 5	13008									1
12- 6	13347									1
12- 7	245									1
12- 8	1-12448									1
12- 9	13008									1
12-10	13349									1
12-11	427									2
12-12	8325									3
12-13	7018									4
12-14	1-8332									1
12-15	8318									1
12-16	8330									1
12-17	8617									1
12-18	7019									1

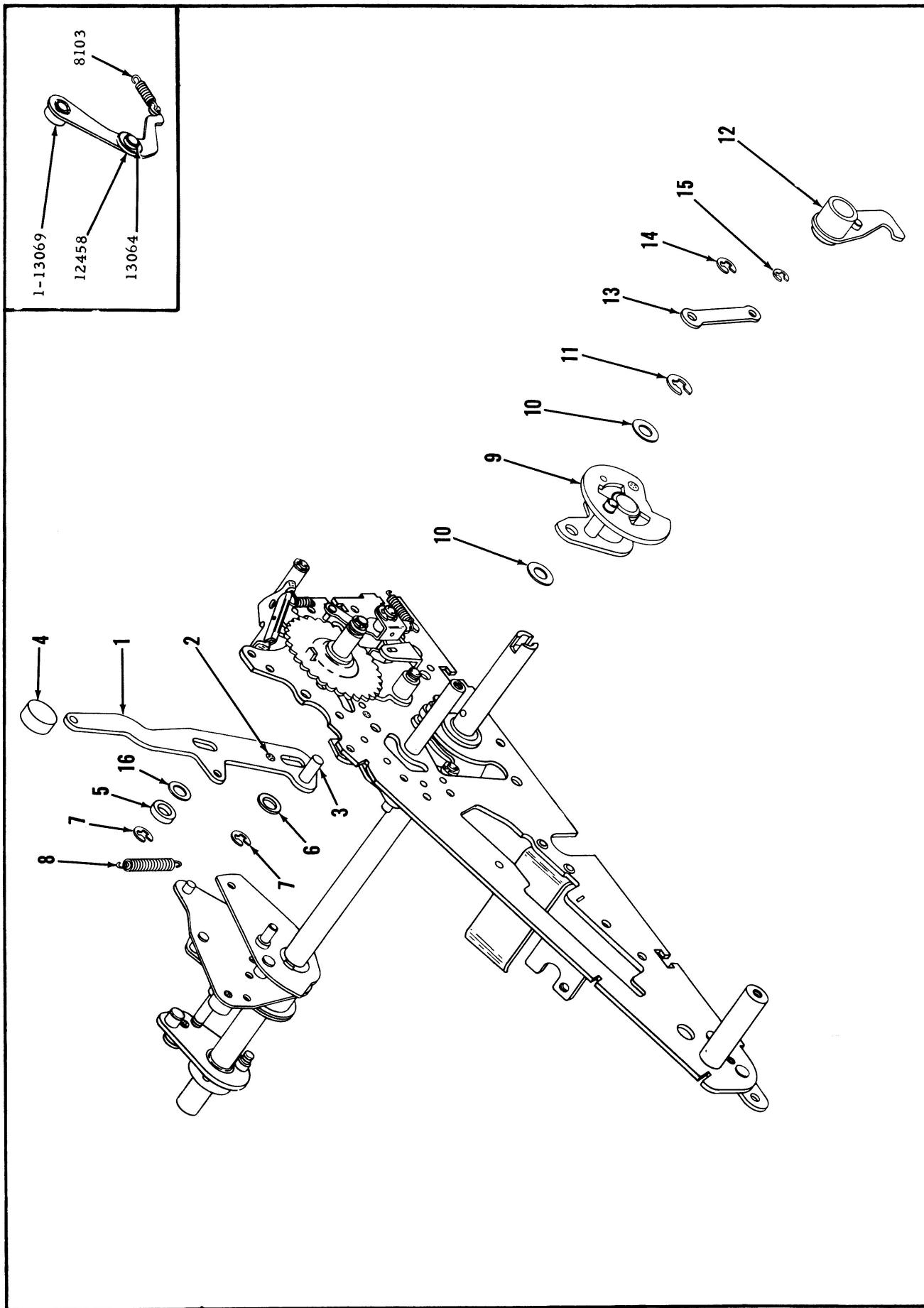


FIGURE 13

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
13- 1	1-13325	Slide Assembly - Total								1
13- 2	11305	Stud - Spring								1
13- 3	4339	Stud								1
13- 4	7116	Knob - Error Key								1
13- 5	8348	Spacer - Flat (.078")								1
13- 6	8325	Spacer - Flat (.025")								1
13- 7	7018	Keeper - Spring (.156")								2
13- 8	2983	Spring (.812", .018" Wire)								1
13- 9 A	1-8425	Cam Assembly - Subtract								1
13-10	1268 $\frac{1}{2}$	Spacer - Flat (.015")								2
13-11	7019	Keeper - Spring (.1875")								1
13-12	1-9012	Lock Assembly - Operating Shaft Arm								1
13-13	3974	Link - Ribbon Feed								1
13-14	7018	Keeper - Spring (.156")								1
13-15	7017	Keeper - Spring (.125")								1
13-16	5158	Spacer - Flat (.008")								1

A - For machines below serial #2049-023 order #1-13068 Subtract Cam Assembly. Multiplic-
and Wheel Detent Arm Assembly #1-13069 is used with #1-13068 on machines below this
serial number. (see illustration in box).

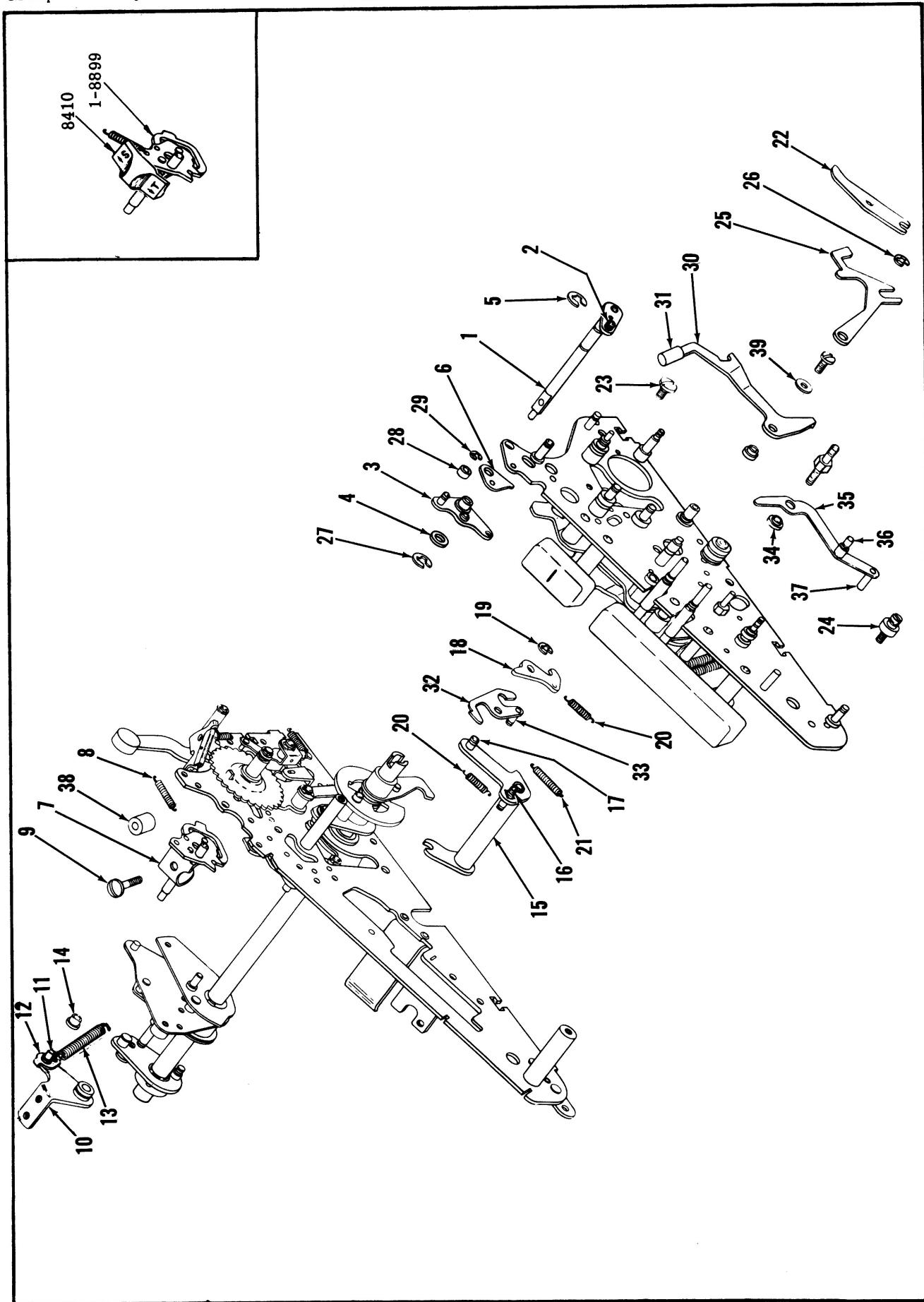


FIGURE 14

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name									No. Req. per Assembly
			1	2	3	4	5	6	7	8	
14- 1 A	1-13071	Shaft Assembly - Total Key									1
14- 2	12734	Stud - Keeper									1
14- 3 B	1-13499	Crank Assembly - Total Key Interlock									1
14- 4	S-966	Spacer - Flat (.048")									1
14- 5	5782	Keeper - Spring (.1875") (Adjustment Keeper #5781 & #7019)									1
14- 6	1-12610	Crank Assembly - Non-Add Motor Trip									1
14- 7B	1-13330	Key Assembly - Total									1
14- 8	S-989	Spring (.500", .022" Wire)									1
14- 9	13059	Screw - Total Key Bracket									1
14- 10	1-5914	Crank Assembly - Total Key									1
14- 11	4123	Stud - Shoulder									1
14- 12	7489	Holder - Spring									1
14- 13	7491	Spring (.1500", .022" Wire)									1
14- 14	5581	Roller - Shoulder									1
14- 15	1-12911	Crank and Arm Assembly - Minus									1
14- 16	12908	Stud - Spring									1
14- 17	12909	Stud - Auto-Subtract Hook Keeper									1
14- 18	8405	Hook - Minus Crank Connecting									1
14- 19	7018	Keeper - Spring (.156")									1
14- 20	12929	Spring (.516", .008" Wire)									2
14- 21	427	Spring (.687", .011" Wire)									1
14- 22	25333	Crank - Motor Trip									1
14- 23	8356	Screw - Shoulder									1
14- 24	13007	Stud - Spring Keeper									1
14- 25	12298	Lock - Subtract Key									1
14- 26	7018	Keeper - Spring (.156")									1
14- 27	5782	Keeper - Spring (.1875")									1
14- 28	3813	Roller (.218")									1
14- 28	3108	Roller (.1875")									
14- 28	8609	Roller (.203")									
14- 28	3883	Roller (.229")									
14- 28	3885	Roller (.250")									
14- 28	3786	Roller (.270")									
		(Continued on Following page)									

A - Order #1-13071 Total Key Shaft for machines above serial #1360-084. For machines below this serial number, order #1-13071 Total Key Shaft, #13072 Tubular Spacer, and #13059 Total Bracket Screw.

Order #13072 Tubular Spacer for machines above serial #1360-084. For machines below this serial number, order #13058 Tubular Spacer.

B - Order #1-8438 Minus Crank Assembly for all Multiplier Models.

Order #1-9121 Total Key Interlock Crank for machines below serial #1532-929.

Order #1-8899 Total Key and #8410 Total Button (illustrated at left) for machines below serial #1532-929.

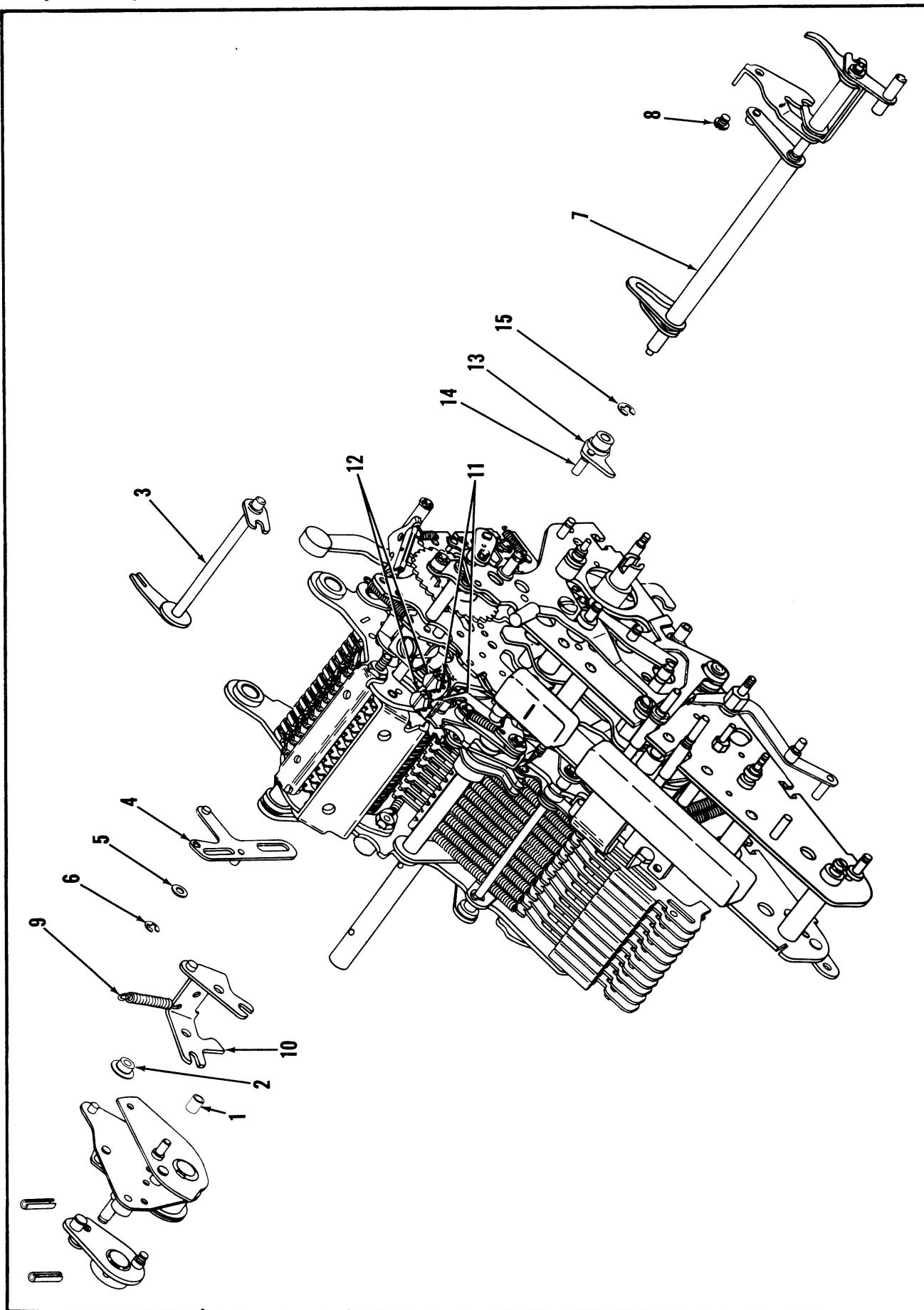


FIGURE 15

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
(Continued from preceding page)										
14-29	7017	Keeper - Spring (.125")								1
14-30 C	13154	Key - Stop								1
14-31	12628	Button - Stop								1
14-32	1-12923	Hook Assembly - Auto-Subtract								1
14-33	12921	Stud - Auto-Subtract Hook Spring								1
14-34	12926	Bearing - Stop Key Connecting Arm								1
14-35	1-12920	Arm Assembly - Stop Key Connecting								1
14-36	12918	Stud - Stop Key Connecting Arm								1
14-37	12796	Stud								1
14-38 A	13072	Spacer - Tubular (Total Key) - See note A on preceding page								1
14-39	11430	Spacer - Flat (.020")								1
15- 1	7415	Roller (.4875")								1
15- 2	6978	Roller - Rack Cam								1
15- 3	1-8125	Control Assembly - Credit Balance Intermediate								1
15- 4	1-12595	Control Link Assembly - Credit Balance								1
15- 5	5965	Spacer - Flat (.025")								1
15- 6	7017	Keeper - Spring (.125")								1
15- 7 A	1-13368	Block Assembly - Feature Key								1
15- 8	3781	Screw - Binding Head (.115")								1
15- 9	1291-1	Spring (.062", .012" Wire)								1
15-10	1-7459	Crank Assembly - Credit Balance and Subtract								1
15-11	2509	Washer - External Tooth Lock								2
15-12	8259	Screw - Hex Head (.218")								2
15-13	1-9175	Crank Assembly - Feature Key Motor Trip								1
15-14	8292	Stud - Shoulder								1
15-15	7018	Keeper - Spring (.156")								1

A - Order #1-9127 Feature Key Block for machines below serial #1532-929.

C - Order #12931 Stop Key for machines below serial #1419-300.

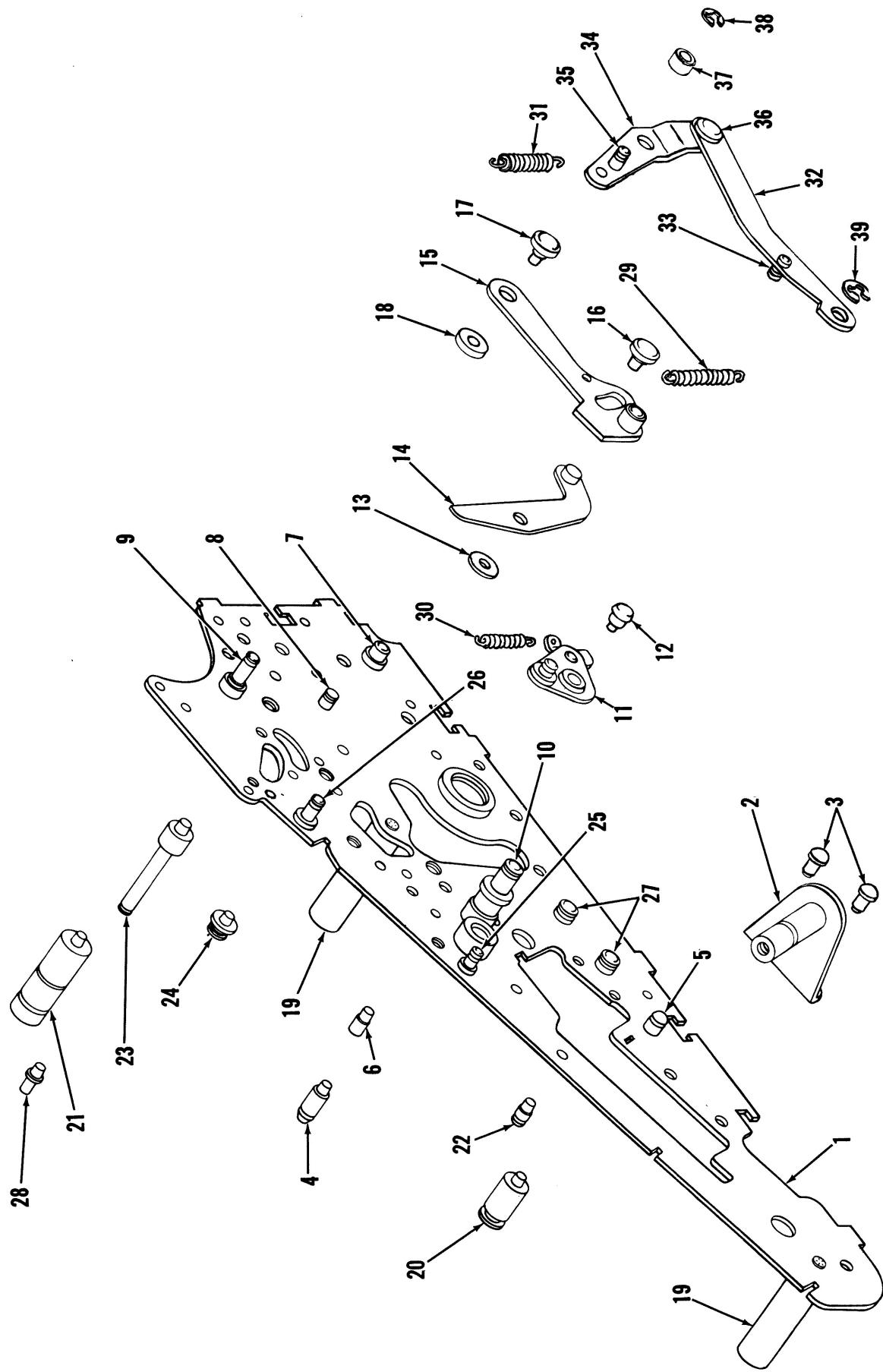


FIGURE 16

CUSTON LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
16 A	1-13380	Frame Assembly - Control (Left)								1
16- 1	8911	Frame - Control (Left)								1
16- 2	1-12684	Bracket Assembly - Stop Carriage Restoring Arm								1
16- 3	2901	Rivet - Round Head								2
16- 4	7985	Stud								1
16- 5	S-681 $\frac{1}{2}$	Stud - Spring								1
16- 6	15527	Stud								1
16- 7	4748	Stud - Shoulder								1
16- 8	1425 $\frac{3}{4}$	Stud - Spring								1
16- 9	6916	Stud - Double Shoulder Keeper (Repeat Arm Pivot)								1
16-10	4523	Stud - Special Shoulder Keeper (Restoring Arm Disengaging)								1
16-11	1-4512	Crank Assembly - Subtract Key Detent								1
16-12	4504	Rivet - Shoulder								1
16-13	2362 $\frac{1}{2}$ *	Spacer - Flat (.020")								1
16-14	1-4806 *	Lever Assembly - Subtract								1
16-15	1-6903 *	Lock Assembly - Subtract								1
16-16	4694 *	Rivet - Shoulder								1
16-17	S-875 $\frac{1}{2}$ -1 *	Rivet - Shoulder								1
16-18	F-1143 $\frac{1}{4}$ *	Spacer - Flat (.059")								1
16-19	8367	Post - Rivet								2
16-20	12251	Stud - Locating								1
16-21	12258	Post - Left Outer Frame								1
16-22	7993	Stud - Spring								1
16-23	5865	Stud								1
16-24	7952	Stud								1
16-25	12951	Stud - Shoulder Spring								1
16-26	12952	Stud - Shoulder Spring Keeper								1
16-27	12964	Stud - Spring Keeper								1
16-28	9321	Stud								2
16-29	M-789	Spring (.468", .013" Wire)								1
16-30	6535	Spring (.260", .010" Wire)								1
16-31	888	Spring (.594", .020" Wire)								1
16	1-4582	Detent Assembly - Repeat Key								1
16-32	4506 *	Link - Repeat Key Detent								1
16-33	6986	Stud - Spring								1
16-34	4502 *	Detent - Repeat Key								1
16-35	6983 *	Stud - Keeper								1
16-36	2113 *	Rivet - Shoulder								1
16-37	3885	Roller (.250") - Adjustment Rollers #3813 (.218") #3883 (.229") & #3786 (.270") for Repeat Key restoring)								1
16-38	7017	Keeper - Spring (.125")								1
16-39	7018	Keeper - Spring (.156")								1
<p>A - Left Control Frame #1-13380 is used on machines above serial #1772-681. Frame #1-13312 is used on machines between serial #1532-929 and #1772-681. Frame #1-12953 is used on machines below serial #1532-929.</p>										

* This part, or assembly, is not individually replaceable in this location. Order the next highest assembly that is replaceable.

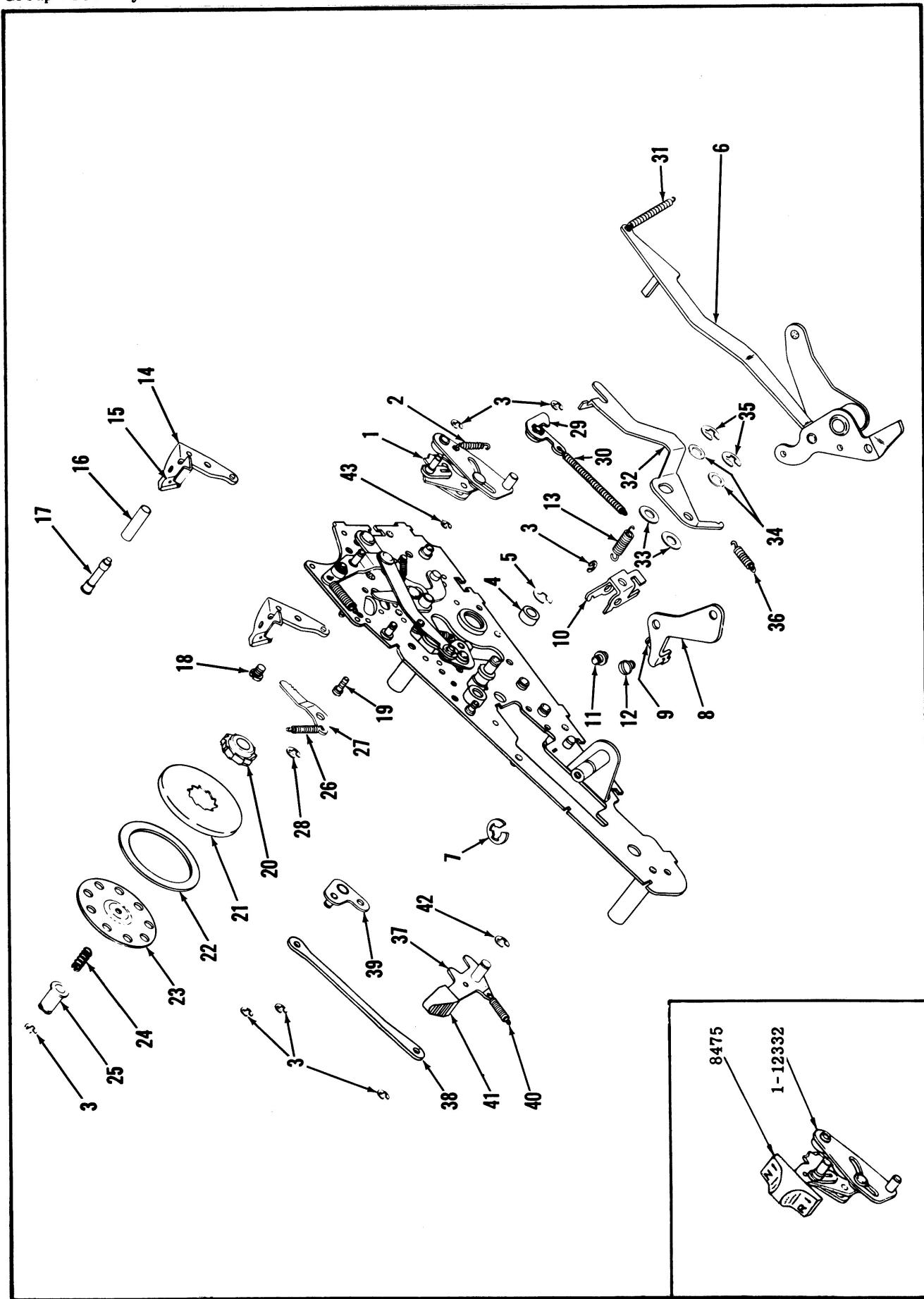


FIGURE 17

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
17- 1 A	1-13385	Arm Assembly - Repeat & Non-Add								1
17- 2	13371	Spring (.872", .016" Wire)								1
17- 3	7017	Keeper - Spring (.125")								7
17- 4	237	Roller (.312") (Adjustment Rollers #4435 (.281") #4584 (.296"), #4585 (.328"), #4586 (.344")								1
17- 5	7019	Keeper - Spring (.1875")								1
17- 6	1-12949	Arm Assembly - Stop Carriage Restoring								1
17- 7	7020	Keeper - Spring (.250") (Adjustment Keeper #8844 (AR) and Spacer #538A (AR))								1
17- 8	1-12749	Control Assembly - Auto-Total Pivot								1
17- 9	12171	Stud - Keeper								1
17-10	12769	Trip - Calculating Cam Shaft Feed Pawl								1
17-11	7154	Screw - Spring								1
17-12	3781	Screw - Binding Head (.115")								1
17-13	3547	Spring (.187", .008" Wire)								1
17	1-5864	Bracket Assembly Complete - Ribbon Guide (Left)								1
17-14	5860 *	Bracket Assembly - Ribbon Guide (Left)								1
17-15	4143	Clip - Ribbon Guide Bracket								1
17-16	5858	Roller - Ribbon Guide								1
17-17	9394	Stud - Shoulder								1
17-18	3781	Screw - Binding Head (.115")								1
17-19	15581	Stud - Spring								1
17-20	5851	Ratchet - Ribbon Feed (Left)								1
17-21	5852	Plate - Friction Ring								1
17-22	5853	Ring - Friction (.031") (Vellumoid)								1
17-23	5854	Drive Plate - Ribbon Spool (Left)								1
17-24	5855	Spring - Compression (Left Ribbon Feed)								1
17-25	5856	Bushing - Ribbon Feed (Left)								1
17-26	F3-82	Spring (.625", .010" Wire)								1
17-27	5870	Detent - Stop Left Ribbon Feed Ratchet								1
17-28	9233	Keeper - Spring								1
17-29	1-12814	Stop Assembly - Restore Link								1
17-30	2982	Spring (.813", .010" Wire)								1
17-31	8662	Spring (1.752", .012" Wire)								1
17-32	12816	Arm - Actuating (Restore Link)								1
17-33	1290 $\frac{1}{4}$	Spacer - Flat (.010")								2
17-34	11242	Washer								2
17-35	7019	Keeper - Spring (.1875")								2
17-36	585	Spring (.343", .014" Wire)								1
17-37 B	1-13383	Key Assembly - Repeat & Non-Add								1
17-38 B	13386	Link - Repeat & Non-Add Key								1
17-39 B	1-13306	Crank Assembly - Repeat & Non-Add Key								1
17-40	M-789	Spring (.443", .013" Wire)								1
17-41	13348	Button - Selection								1
17-42	7018	Keeper - Spring (.156")								1
17-43	13078	Keeper - Spring (For Adjustment Use #12575)								1

A - Repeat & Non-Add Arm #1-13385 is used on machines above serial #1532-929, for machines below serial #1532 - 929, order #1-12332 Repeat & Non-Add Arm (see illustration in box).

B - Order #1-13308 Repeat & Non-Add Key and #13309 Repeat & Non-Add Key Link for machines below serial #1772-681.

* This part, or assembly, is not individually replaceable in this location. Order the next highest assembly that is replaceable.

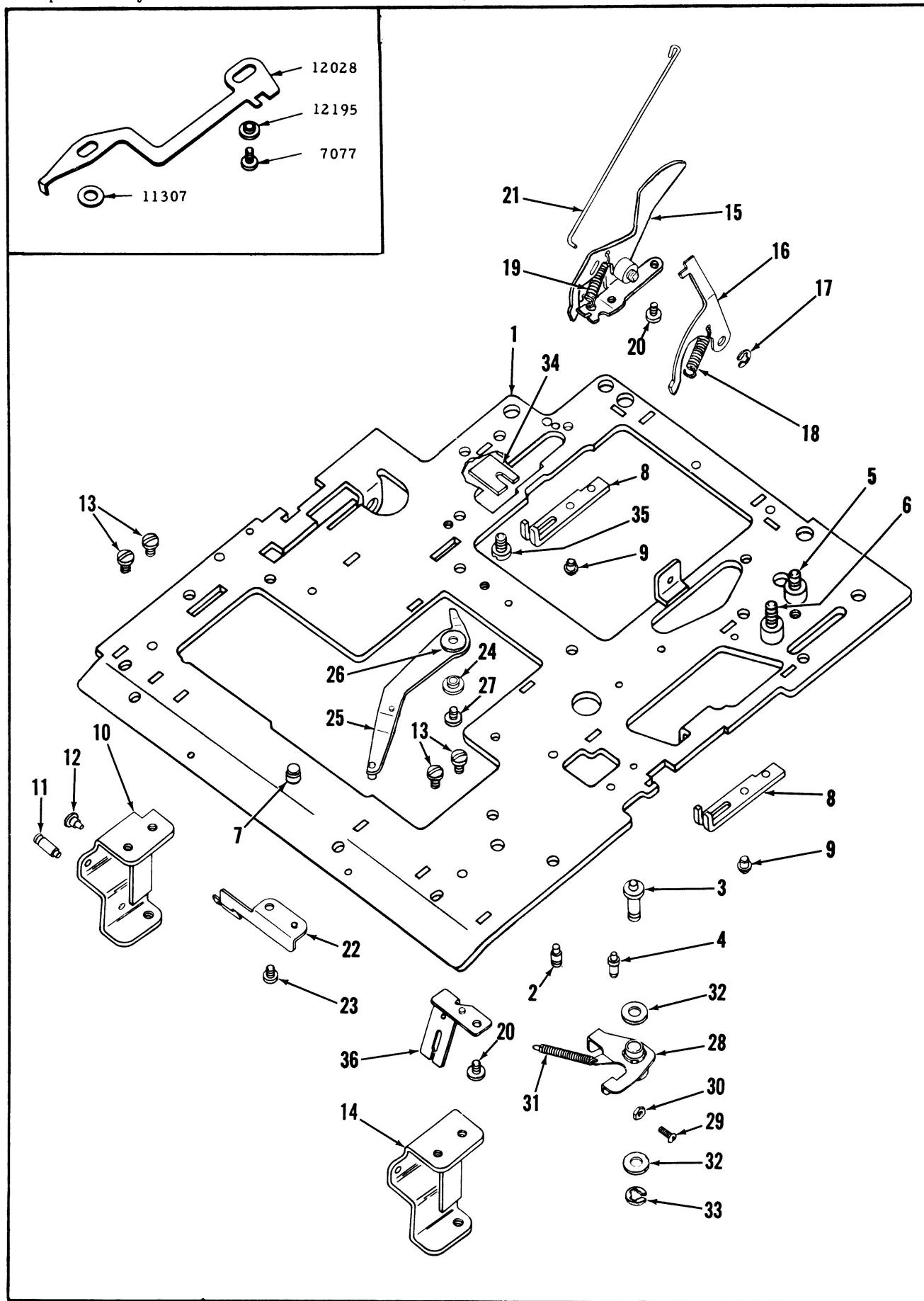


FIGURE 18

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name									No. Req. per Assembly
			1	2	3	4	5	6	7	8	
18- 1 A	1-13566	Base Assembly									1
18- 2	1293	Stud									1
18- 3	12072	Stud - Shoulder Spring Keeper									1
18- 4	13612	Stud - Spring									1
18- 5	9015	Stud - Spring Keeper Shield									1
18- 6	9016	Stud - Shoulder Spring Keeper									1
18- 7	13209	Stud - Keeper									1
18- 8	12256	Guide - Printing Link									2
18- 9	2901	Rivet - Round Head									2
18-10 B	1-9427	Bracket Assembly - Base Mounting (Left) (1-9428 Multipliers)									1
18-11	255	Stud									1
18-12	7396	Rivet - Shoulder									1
18-13	1267	Screw - Binding Head (.187")									4
18-14 C	1-9473	Bracket Assembly - Base Mounting (Right)									1
18- D	1-13215	Lever Assembly Complete - Non-Add Cam Control									1
18-15	1-13214	Lever Assembly - Non-Add Cam Control									1
18-16	12260	Lever - Keyboard Lock Cam Control									1
18-17	9233	Keeper - Spring (Adjustment Keepers No. 7018 and No. 13039)									1
18-18	4952	Spring (.219", .008" Wire)									1
18-19	12452	Spring (.375", .022" Wire)									1
18-20	3632	Screw - Binding Head (.187")									2
18-21	12265	Wire - Non-Add Control Lever									1
18-22 E	13028	Guide - Index Control Drive Arm Lock Slide									1
18-23	3781	Screw - Binding Head (.115")									1
18-24	12195	Spacer - Shoulder									1
18-25	1-25233	Arm Assembly - Escapement Shaft Connecting									1
18-26	7372	Spacer - Flat (.012")									1
18-27	3632	Screw - Binding Head (.187")									1
18-28	1-13180	Latch Assembly Complete - Calculating Stop Cam									1
18-29	12738	Screw - Adjusting									1
18-30	3410	Nut - Hex (.184")									1
18-31	4734	Spring (.459", .010" Wire)									1
18-32	1268 ₁ ₂	Spacer - Flat (.015")									2
18-33	7019	Keeper - Spring (.1875")									1
18-34	12950	Block - Printing Link Control Slide									1
18-35	6962	Screw - Binding Head (.312")									1
18-36	13063	Guide - Multiply Cam Arm									1
<p>A - For machines below serial #2049-023, order Base Assembly #1-12598. Multiplicand Wheel Detent Slide #12028 is used on machines below serial #2049-023. (See illustration in box)</p>											
<p>B - Base Mounting Bracket #1-9427 is used on Calculators above serial #1581-661. Base Mounting Bracket #1-9428 is used on Multipliers above serial #1581-661. Base Mounting Bracket #1-13277 is used on Calculators between serial #1468-846 & #1581-661. Base Mounting Bracket #1-13278 is used on Multipliers between serial #1468-846 & #1581-661.</p>											
<p>C - Base Mounting Bracket #9425 is used on machines above serial #1581-661. Base Mounting Bracket #12498 is used on machines below serial #1581-661.</p>											
<p>D - Non-Add Cam Control Lever Complete #1-13215 and Non-Add Cam Control Lever #1-13214 are used on machines above serial #1435-374, or machines using #7347 or #13496 Roller on Main Shaft. For machines below this serial number, order #1-12480 Lever or #1-12668 Lever Complete.</p>											
<p>E - Order #12063 Rack Stop Raise Lever Guide for Multipliers below serial #1124-396.</p>											

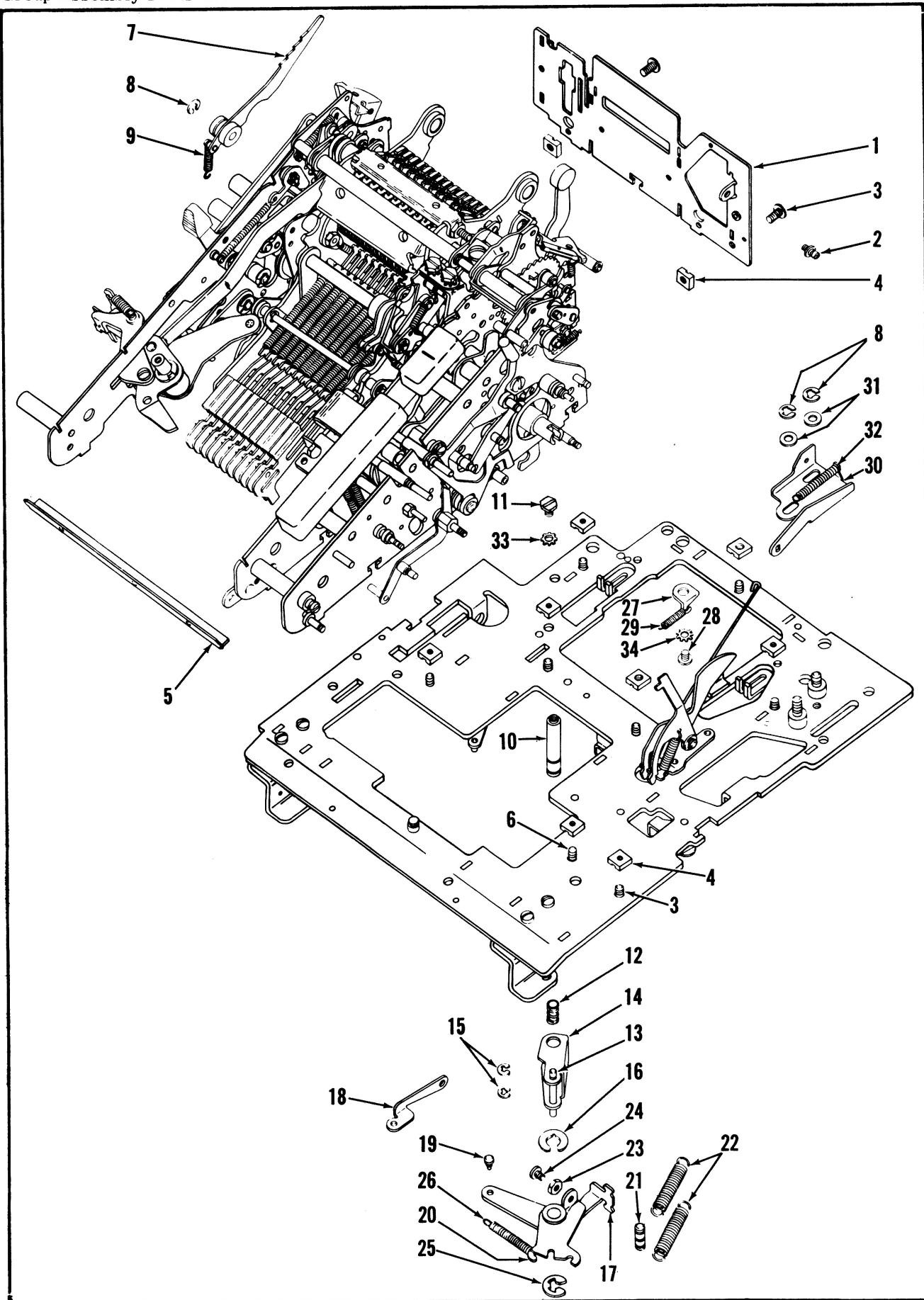


FIGURE 19

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
19- 1	8038	Plate - Tie (Rear)								1
19- 2	7154	Screw - Shoulder Spring								1
19- 3	6624	Screw - Binding Head (.250")								9
19- 4	5937	Nut - Special								10
19- 5	8109	Rail - Stop Carriage (Front)								1
19- 6	3421	Screw - Binding Head (.218")								1
19- 7	1-8262	Pawl Assembly - Ribbon Feed (Left)								1
19- 8	7018	Keeper - Spring (.156")								3
19- 9	2980-1	Spring (.531", .018" Wire)								1
19-10	12196	Shaft - Index Control Arm								1
19-11	8259	Screw - Hex Head (.218")								1
19-12	12506	Spring - Compression								1
19	1-12669	Control Assembly - Index								1
19-13	12189	Shaft - Keeper (Index Control)								1
19-14	12188	Control - Index								1
19-15	7017	Keeper - Spring (.125")								2
19-16	92	Keeper - Pinch								1
19 A	1-25256	Arm and Link Assembly Complete - Index Control Drive								1
19-17 A	1-25255	Arm and Link Assembly - Index Control Drive								1
19-18	25254	Link - Index Cam								1
19-19	12187	Rivet - Shoulder								1
19-20	12190	Arm - Index Control Yield								1
19-21	8419	Bar - Spring								1
19-22 A	13173	Spring (.1036", .037" Wire)								2
19-23	2101 $\frac{1}{4}$	Nut - Hex (.250")								1
19-24	12730	Screw - Binding Head (.250")								1
19-25	7020	Keeper - Spring (.250")								1
19-26	2483	Spring (.422", .010" Wire)								1
19-27	12492	Retainer - Spring								1
19-28	7	Screw - Binding Head (.187")								1
19-29	4734	Spring (.459", .010" Wire)								1
19-30	9017	Slide - Lock								1
19-31	8325	Spacer - Flat (.025")								2
19-32	1281	Spring (.718", .016" Wire)								1
19-33	2509	Lockwasher - External Tooth								1
19-34	1499 $\frac{1}{4}$	Lockwasher - External Tooth								1
<p>A - Index Control Drive Arm & Link Assembly Complete #1-25256 is used on machines above serial #1890-146. To replace #1-25256 or component parts, order as indicated below.</p> <p>If machine is below serial #1387-000, order #1-25256 Index Control Drive Arm & Link Complete and #1-25275 Control Cam Bracket Complete.</p> <p>If machine is between serial #1387-000 and #1435-958, and #1-25255 Index Control Drive Arm & Link, or #25254 Index Cam Link and #12187 Rivet, and #1-25275 Control Cam Bracket Complete.</p> <p>If machine is between serial #1435-958 and #1890-146, order #1-25255 Index Control Drive Arm & Link, or #25254 Index Cam Link and #12187 Rivet, and #1-25275 Control Cam Bracket Complete.</p> <p>Springs #13173 are used on machines above serial #1387-000. For machines below this serial number, order #12503 springs.</p>										

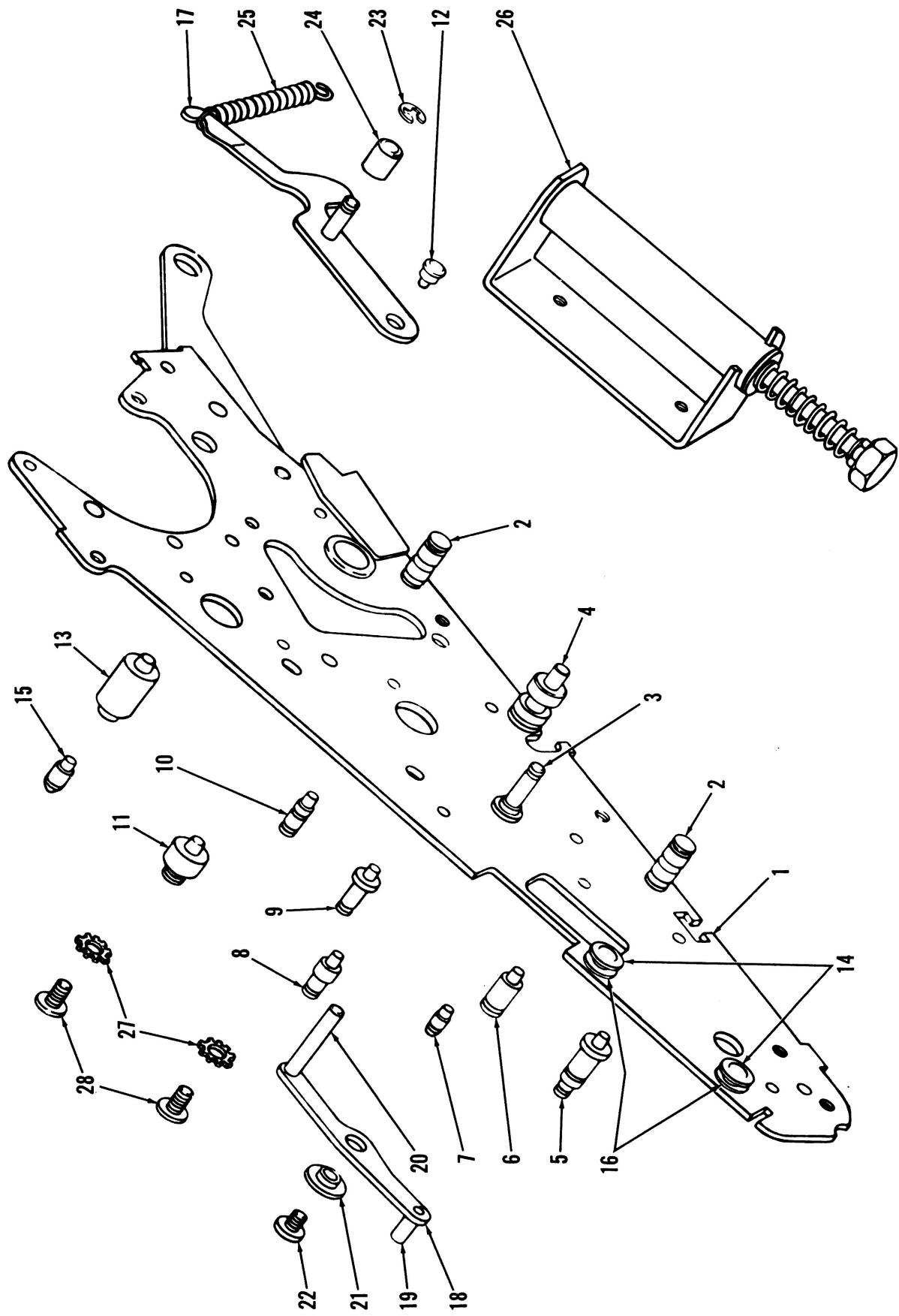


FIGURE 20

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
20 A	1-13547	Frame Assembly - Outer Left								1
20- 1	12410 *	Frame - Outer Left								1
20- 2	12211 *	Stud - Shoulder								2
20- 3	12138	Stud - Double Shoulder								1
20- 4	12408 *	Stud - Shoulder								1
20- 5	12141	Stud - Shoulder Spring Keeper								1
20- 6	12625 *	Stud - Keeper (Calculating Selector)								1
20- 7	13467	Stud								1
20- 8	12245	Stud - Shoulder Keeper								1
20- 9	13012	Stud - Keeper								1
20-10	12248	Stud - Spring								1
20-11	13191	Stud - Shoulder Spring Keeper								1
20-12	14585	Rivet - Shoulder								1
20-13	13116	Post - Control Arm Bracket Support								1
20-14	12801	Rivet - Shoulder								2
20-15	S-681 $\frac{1}{2}$	Stud								1
20-16	7397	Spacer - Flat								2
20-17	1-8204	Detent Assembly - Drive Link Retarding								1
20-18	1-12945	Arm Assembly - Calculating Selector Feed Pawl Control								1
20-19	12944 *	Pin - Feed Pawl Selector								1
20-20	12139	Stud - Calculating Selector								1
20-21	12195	Bearing - Escapement Shaft Connecting Arm								1
20-22	3632	Screw - Binding Head (.187")								1
20-23	12575	Keeper - Spring								1
20-24	7928	Roller								2
20-25	8558	Spring (.744", .024" Wire)								1
20-26	1-8739	Air Check Assembly Complete								1
20-27	2509	Washer - External Tooth Lock								2
20-28	3632	Screw - Binding Head (.187")								2

A - Frame #1-13547 is used on machines above serial #1297-732. Order Frame #1-12802 for machines below this serial number.

* This part, or assembly, is not individually replaceable in this location. Order the next highest assembly that is replaceable.

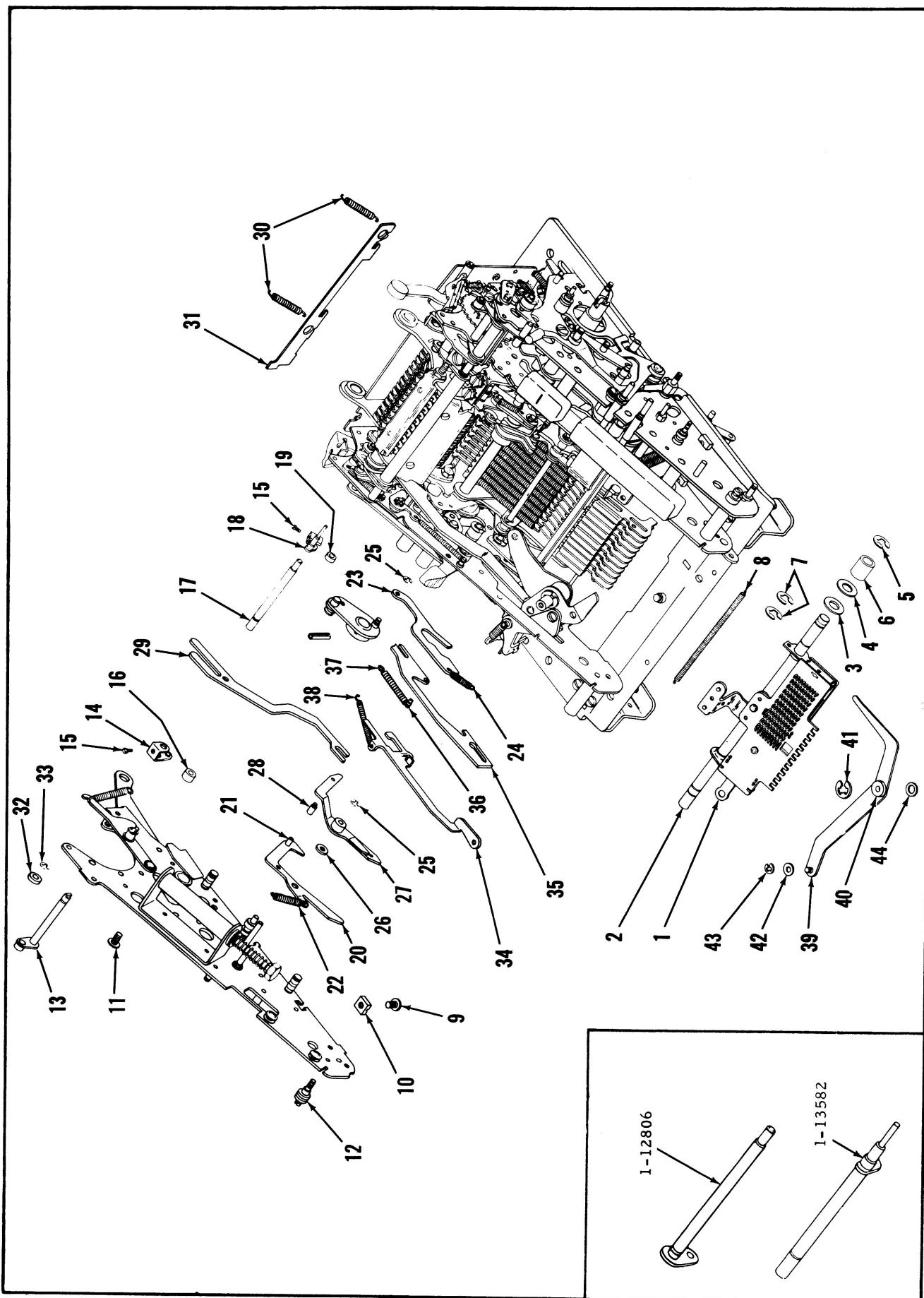


FIGURE 21

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
21- 1	1-8787	Stop Carriage Assembly								1
21- 2	8918	Shaft - Stop Carriage (Rear)								1
21- 3	4465	Washer - Special (.062" - Neoprene)								1
21- 4	1182	Spacer - Flat (.049")								1
21- 5	8844	Keeper - Spring (.250")								1
21- 6	13621	Spacer - Rubber								1
21- 7	7020	Keeper - Spring (.250")								2
21- 8	8616	Spring (2.796", .012" Wire - Stop Carriage)								1
21- 9	6624	Screw - Binding Head (.250")								1
21-10	5937	Nut - Special								1
21-11	7077	Screw - Binding Head (.281")								1
21-12	13163	Screw - Shoulder (Total Transfer Key Guide)								1
21-13	1-12590	Arm Assembly - Non-Add Key Shaft								1
21-14 A	1-13576	Arm Assembly - Signal Control Shaft								1
21-15	12447	Screw - Auto- Total Drive Link								2
21-16	13577	Roller (.250")								1
21-17 A	13625	Shaft - Signal Control								1
21-18 A	1-12810	Crank Assembly - Signal Type Sector								1
21-19 A	3813	Roller (.218")								1
21-20	1-25277	Pivot Assembly - Auto- Total								1
21-21	4717	Stud								1
21-22	2604	Spring (.594", .018" Wire)								1
21-23	12142	Pawl - Calculating Cam Shaft Feed								1
21-24	M-289	Spring (.406", .012" Wire)								1
21-25	7017	Keeper - Spring (.125")								2
21-26	F-18321 ₂	Spacer - Flat (.028") (Adjustment Spacers #S-282 ₁ ₂ (.010") #7519 (.005"))								1
21-27	1-25279	Control Assembly - Calculating Cam Shaft Feed Pawl								1
21-28	12643	Stud								1
21-29	12064	Control Slide - Printing Link								1
21-30	4563	Spring (1", .013" Wire)								2
21-31 B	13077	Control - Printing Link								1
21-32	9231	Spacer - Flat (.060") (Adjustment Spacers #S-288 ₁ ₂ (.010") #5133 (.016"))								1
21-33	9233	Keeper - Spring (Adjustment Keeper #7018)								1
		(Continued on following page)								

A - Signal Control Shaft #13625 is used on machines above serial #2479-065, Signal Control Shaft #1-13582 (illustrated in box) was used between serial #2200-571 & #2479-065. Signal Arm Shaft #1-12806 (illustrated in box) used below serial #2200-571. To Replace Signal Control Shaft #1-13582 order all parts with "A" indication. For Multipliers below serial #1301-619, order #1-12555 Signal Control Shaft.

For Multipliers below serial #1301-619, order #12127 Signal Type Sector Crank.

For Multipliers below serial #1301-619 order #12626 Roller.

B - To replace Printing Link Control #13077 below serial #1373-553, also, order #7243 Gear Box Dust Cover.

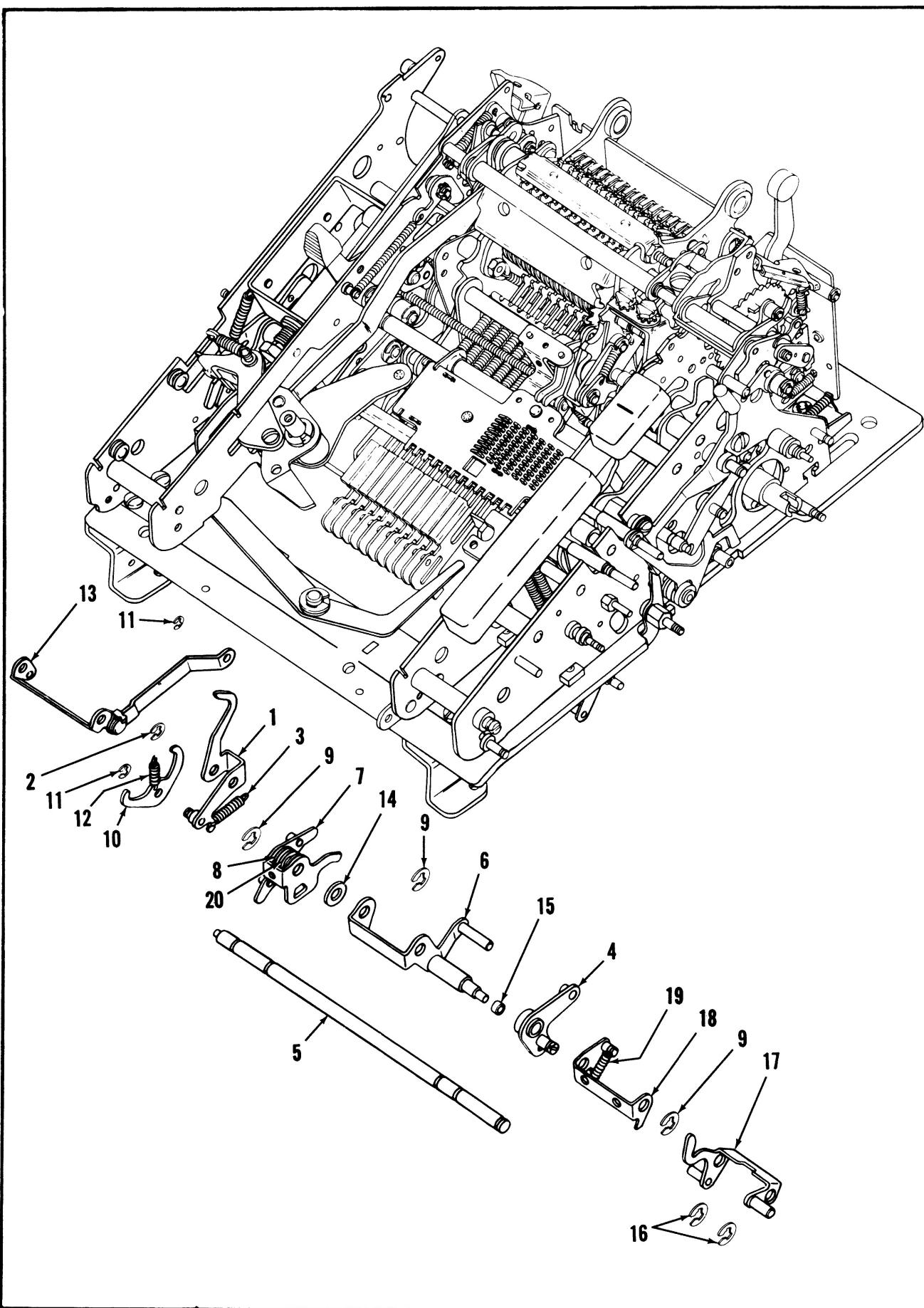


FIGURE 22

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
(Continued from preceding page)										
21-34 D	12212	Latch - Index Stop Control Slide								1
21-35	1-12572	Slide Assembly - Index Stop Control								1
21-36	6986	Stud - Spring								1
21-37	2604	Spring (.336", .016" Wire)								1
21-38	12497	Spring - Index Stop Control Slide Latch								1
21-39	1-12493	Arm Assembly - Index Stop Control								1
21-40 E	1290 $\frac{1}{4}$	Bearing - Escapement Shaft Connecting Arm								1
21-41 E	7019	Keeper - Spring (.1875")								1
21-42	1420 $\frac{1}{2}$	Spacer - Flat (.008")								1
21-43	7017	Keeper - Spring (.125")								1
21-44	S-282 $\frac{1}{2}$	Spacer - Flat (.010")								1
22- 1	1-12587	Cam Arm Assembly - Fugitive One								1
22- 2	7018	Keeper - Spring (.156")								1
22- 3	25366	Spring (.468", .026" Wire)								1
22- 4 A	1-13050	Crank Assembly - Credit Balance								1
22- 5 B	13055	Shaft - Credit Balance								1
22- 6	1-13051	Pawl Assembly - Trip (Fugitive One)								1
22- 7	1-12585	Latch Assembly - Fugitive One								1
22- 8	3925	Spacer - Flat (.020")	(Adjustment spacers #11307 (.025"); #11242 (.015"); #1290 $\frac{1}{4}$ (.010"), and #S-282 $\frac{1}{2}$ (.008") are used in place of #3925 to attain .010" to .015" sideplay in latch assembly)							
22- 9	7019	Keeper - Spring (.1875")								3
22-10	12307	Fork - Fugitive One (Adjustment Fork #13285)								1
22-11	7017	Keeper - Spring (.125")								2
22-12	12491	Spring (.109", .008" Wire)								1
22-13	1-12489	Link & Cradle Assembly - Calculating Count Arm								1
22-14	11307	Spacer - Flat (.025")								1
22-15	7347	Roller - Credit Balance Detent								1
22-16	7019	Keeper - Spring (.1875")								2
22-17	1-12832	Cradle Assembly - Auto-Subtract Hook Control								1
22-18	1-12857	Connecting Bracket Assembly								1
22-19	9317	Spring (.143", .015")								1
22-20	13027	Spacer - Tubular								1
A - Order #1-5813 Credit Balance Crank Assembly for all Multiplier Models.										
B - Order #13054 Credit Balance Shaft for all Multiplier Models. Auto-Subtract Hook Control Cradle Sleeve #12839 is no longer used with Extended Credit Balance Shaft.										
D - Order #12212 Index Stop Control Slide Latch for machines above serial #1375-807. For machines below this serial number, order #12212-1 Index Stop Control Slide Latch.										
E - Escapement Shaft Connecting Arm Bearing #12195 and Screw #3632 are used on machines which do not have a #13209 Stud on Base.										

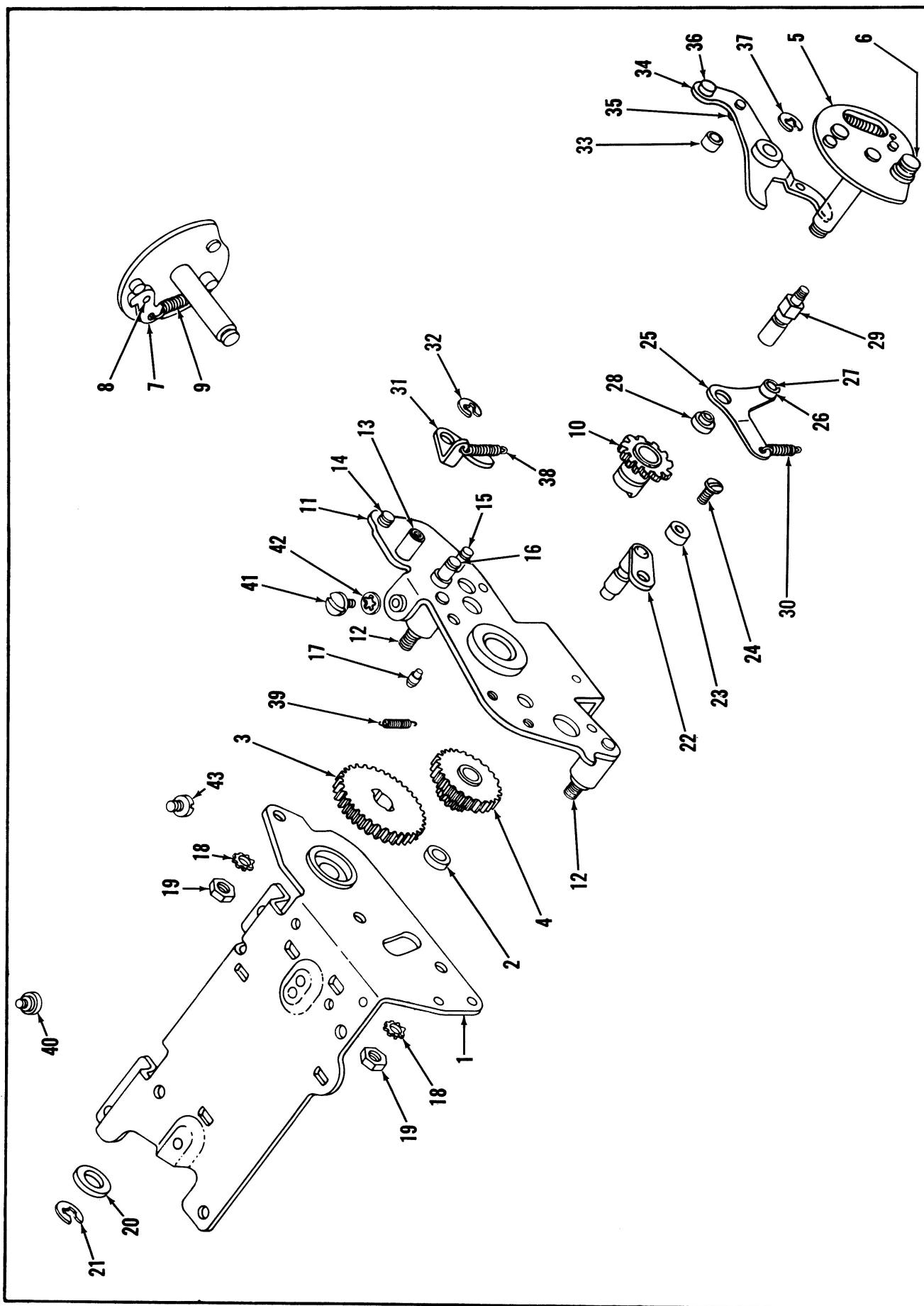


FIGURE 23

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
23 A	1-13579	Gear Box Assembly Complete								1
23- 1	1-12528	Bracket Assembly - Motor Mounting								1
23- 2	9299	Spacer - Flat								1
23- 3	7248	Gear - Drive (48 Teeth)								1
23- 4 B	1-9251	Gear & Pinion Assembly								1
23- 5 C	1-15656	Plate Assembly - Drive								1
23- 6	15655 *	Stud - Motor Trip								1
23- 7 D	17622	Pawl - Drive								1
23- 8	6518	Rivet - Shoulder								1
23- 9	7281	Spring (.250", .011" Wire)								1
23-10 D	9399	Ratchet - Drive								1
23-11 A	1-13297	Gear Box Frame Assembly - Outer								1
23-12	7249	Post - Special Threaded Rivet (Gear Box Tie)								2
23-13	13115	Stud - Shoulder (Calculating Slide Sidewall Support)								1
23-14	7983	Stud								1
23-15	255	Stud - Spring								1
23-16	7257	Stud - Shoulder Keeper (Motor Trip Pivot)								1
23-17	S-45 ₁ ₂	Stud - Spring								1
23-18	1499 ₁ ₄	Washer - External Tooth Lock								2
23-19	S-853 ₁ ₂	Nut-Hex (.312")								2
23-20	S-348 ₁ ₂	Spacer - Flat (.035") (To maintain .005" to .010" maximum end play, use either #1348 $\frac{1}{2}$ Spacer (.025") or #7269 Spacer (.042") for adjustment)								AR
23-21	7020	Keeper - Spring (.250")								1
23-22	1-12500	Retainer Assembly - Gear & Pinion Shaft								1
23-23	12514	Spacer - Eccentric								1
23-24	7077	Screw - Binding Head (.281")								1
23-25	1-7237	Detent Assembly - Plate								1
23-26	3649	Roller								1
23-27	3748	Rivet - Shoulder								1
23-28	8464	Spacer - Shoulder								1
23-29	12165	Stud - Control Arm Bracket Support								1

(Continued on following page)

A - Gear Box Assembly Complete #1-13579 and Outer Gear Box Frame #1-13297 are used in machines above serial #1581-661 using a Flyball Governor Motor and a #1-9251 Gear & Pinion. Gear Box Assembly Complete #1-13298 used in machines above this serial number using a Bodine Motor and a #1-7245 Gear & Pinion.

Gear Box Assembly Complete #1-13117 and Outer Gear Box Frame #1-13112 are used in machines between serial #1297-732 and #1581-661.

Gear Box Assembly complete #1-12687 and Outer Gear Box Frame #1-13112 are used in machines below serial #1297-732. Also, order #13110 Tubular Spacer and #13111 Screw.

B - Gear & Pinion Assembly #1-9251 is used in machines using a Flyball Governor Motor. Gear & Pinion Assembly #1-7245 is used in machines using a Bodine Motor.

C - Drive Plate #1-15656 is used in machines above serial #1775-093 or machines using adjustable Motor Drive Link #15658. For machines below this serial number or for machines using non-adjustable drive link order #1-12517 Drive Plate.

D - Drive Pawl #17622 and Drive Ratchet #9399 are used in machines above serial #1772-411. Drive Pawl #7290 and Drive Ratchet #7253 are used in machines below this serial number.

* This part, or assembly, is not individually replaceable in this location. Order the next highest assembly that is replaceable.

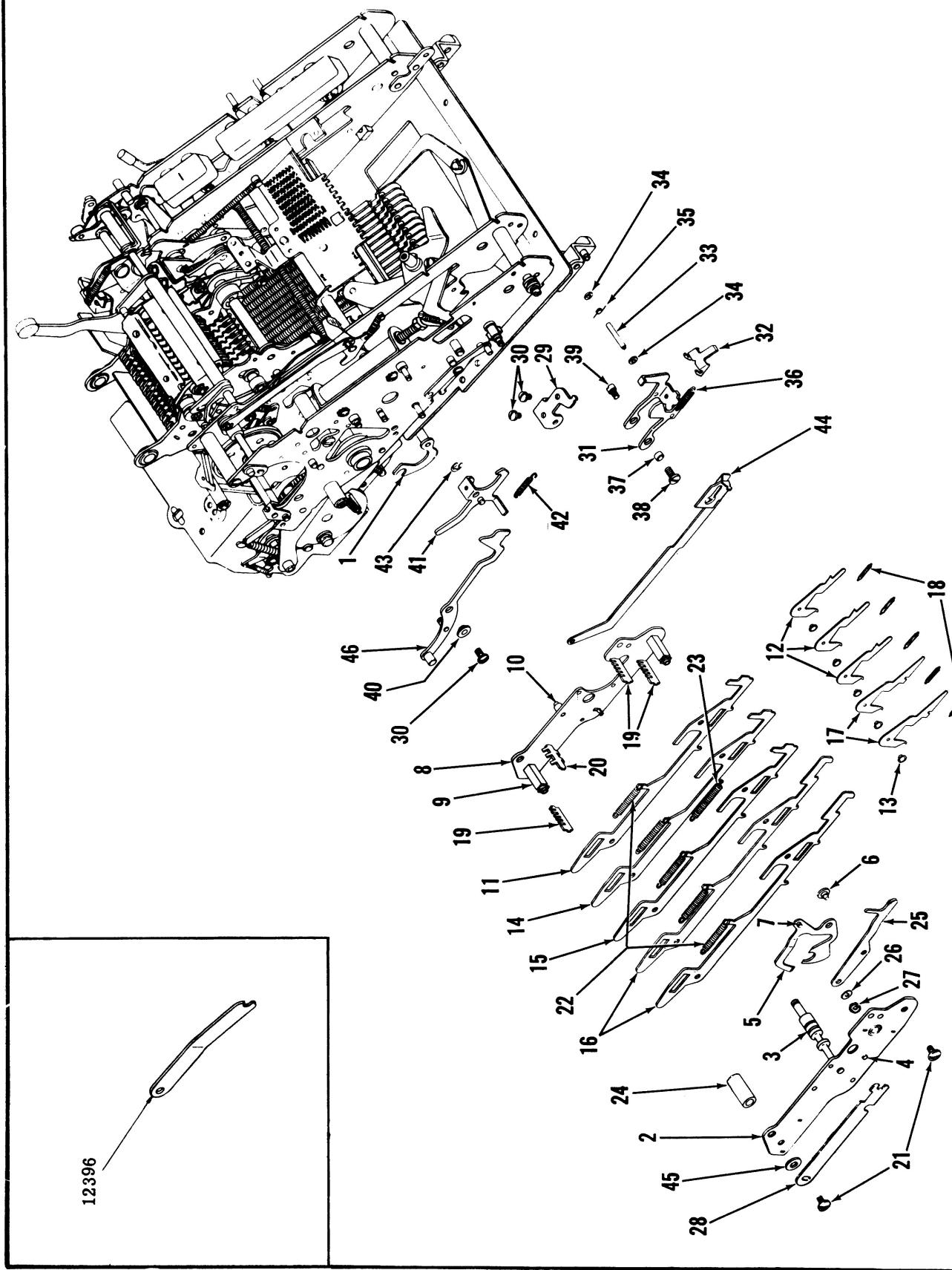


FIGURE 24

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
23-30	8725									(Continued from preceding page)
23-31	6533	Spring (.374", .022" Wire)								1
23-32	7019	Detent - Motor Trip								1
23-33	3108	Keeper - Spring (.1875") (#7096 Screw formerly used)								1
23-34	1-7062	Roller (.187")								1
23-35	4699	Trip Assembly - Motor								1
23-36	11311	Stud								1
23-37	7019	Stud								1
23-38	M-289	Keeper - Spring (.1875")								1
23-39	481	Spring (.409", .012" Wire)								1
23-40	6732	Spring (.500", .011" Wire)								1
23-41	9262	Screw - Shoulder (.172")								1
23-42	2115 ³ ₄	Screw - Round Head (.187")								1
23-43	7	Lockwasher								1
		Screw - Binding Head (.187")								1
24- 1	1-12084	Shaft Assembly - Operating								1
24 A	1-13494	Slide Assembly Unit - Calculating								1
24	1-13491	Frame Assembly - Calculating Slide Unit (Outer)								1
24- 2	13492	Frame - Calculating Slide Unit (Outer)								1
24- 3	12198	Stud - Shoulder Keeper								1
24- 4	4954	Rivet - Shoulder								1
24- 5	12892	Shift - Cam Shaft								1
24- 6	13047	Rivet - Shoulder								1
24- 7	12636	Stud - Keeper								1
24	1-13493	Frame Assembly - Calculating Slide Unit (Inner)								1
24- 8	13490 *	Frame - Calculating Slide Unit (Inner)								1
24- 9	12057	Shaft - Calculating Slide								2
24-10	12179	Stud - Shoulder								1
24 B	1-13489	Slide Assembly - Multiplicand Total								1
24-11	13488	Slide - Multiplicand Total								1
24-12	13479	Block - Slide								1
24-13	13480	Rivet - Shoulder								1
24 B	1-13487	Slide Assembly - Multiplicand Sub- Total								1
24-14	13486	Slide - Multiplicand Sub- Total								1
24-12	13479	Block - Slide								1
24-13	13480	Rivet - Shoulder								1
24 B	1-13482	Slide Assembly - Multiplicand Calculating								1
24-15	13481	Slide - Multiplicand Calculating								1
24-12	13479	Block - Slide								1
		(Continued on following page)								
A	Calculating Slide Assembly Unit #1-13494	is used on machines above serial #1781-942.								
	Calculating Slide Assembly Unit #1-13276	is used on machines between serial #1468-846 and #1781-942.								
	Calculating Slide Assembly Unit #1-13113	is used on machines between serial #1297-732 and #1468-846.								
	Calculating Slide Assembly Unit #1-12651	is used on machines below serial #1297-732.								
B	Calculating Slide Assemblies #1-13489, #1-13487, #1-13482 and #1-13485	are used on machines above serial #1781-942.								
	Calculating Slides #13275, #13274, #13273 and #13272	are used on machines between serial #1468-846 and #1781-942.								
	Calculating Slides #12632, #12474, #12060 and #12061	are used on machines below serial #1468-846.								

* This part, or assembly, is not individually replaceable in this location. Order the next higher assembly that is replaceable.

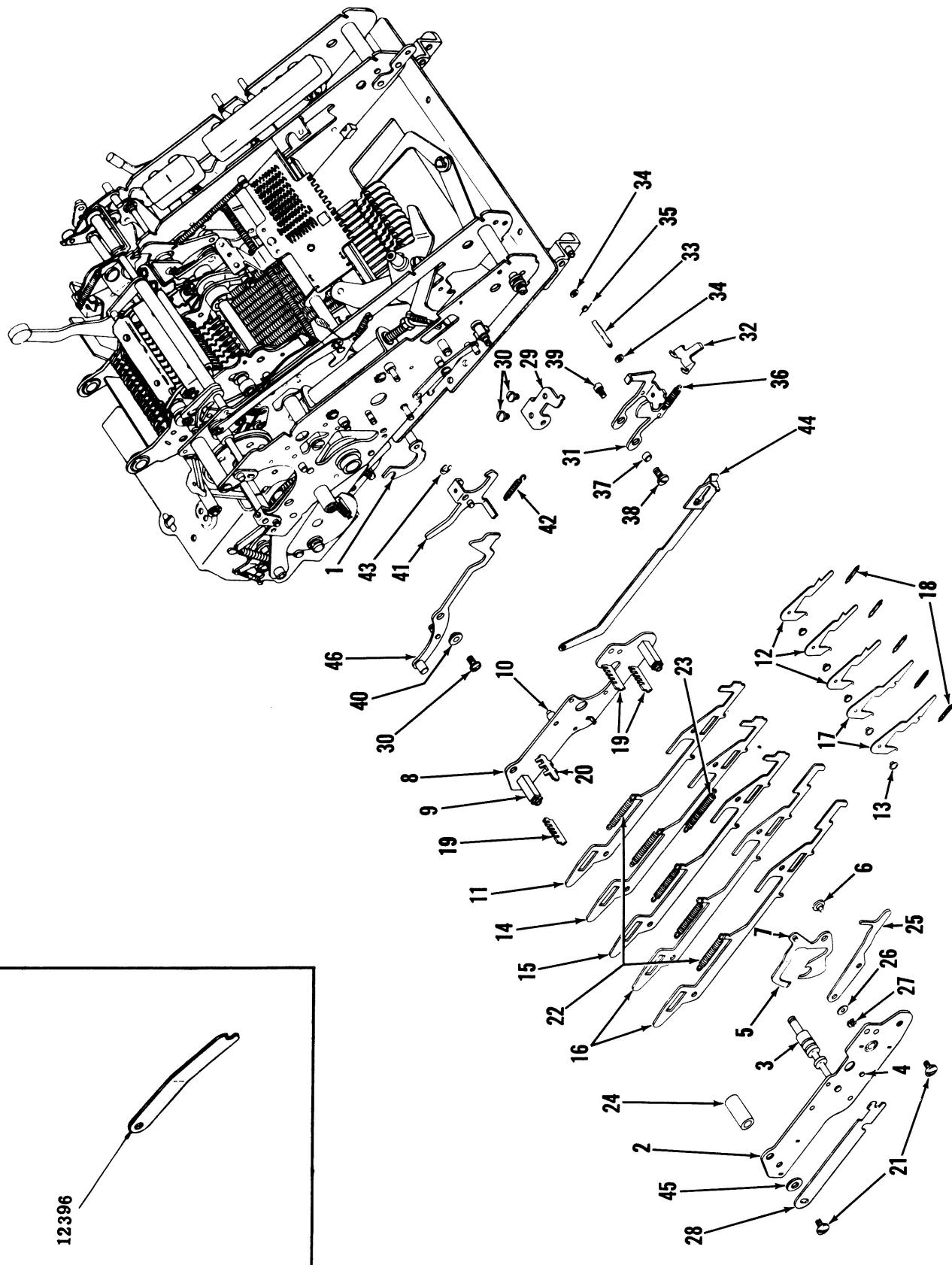


FIGURE 24

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
24-13	13480								(Continued from preceding page)	
24 B	1-13485				Rivet - Shoulder					1
24-16	13484				Slide Assembly - Multiplier Calculating					2
24-17	13483				Slide - Multiplier Calculating					2
24-13	13480				Block - Slide					2
24-18	13495				Rivet - Shoulder					2
24-19	12056				Spring (.272", .008" Wire)					5
24-20	12062				Comb - Calculating Slide					3
24-21	1243 $\frac{1}{2}$				Retainer - Spring					1
24-22	12475				Screw - Binding Head					2
24-23	12757				Spring (.775", .019" Wire)					5
24-24 C	13110				Spring (.845", .013" Wire)					1
24-25	12131				Spacer - Tubular					1
24-26	1420 $\frac{1}{2}$				Link - Cam Shaft Shift					1
24-27	7017				Spacer - Flat (.008")					1
24-28 D	12854				Keeper - Spring (.125")					1
24-29	12055				Spring - Calculating Cam Shaft					1
24-30	3632				Bracket - Calculating Slide					1
24	1-12776				Screw - Binding Head (.187")					3
24-31	12439				Lock Assembly - Multiplicand Calculating Slide					1
24-32	12772				Lock - Multiplicand Calculating Slide					1
24-33	12775				Lock Plate - Multiplicand Calculating Slide					1
24-34	12774				Shaft - Lock Plate					1
24-35	12773				Spacer - Flat (.050")					2
24-36	2483				Spring - Lock Plate					1
24-37	3108				Spring (.422", .010" Wire)					1
24-38	7077				Roller (.1875")					1
24-39	12440				Screw - Binding Head (.281")					1
24-40	12231				Screw - Multiplicand Slide Lock					1
24-41	1-13101				Spacer - Shoulder					1
24-42	4351				Arm Assembly - Index Control Lift					1
24-43	7018				Spring (.203", .007" Wire)					1
24-44 E	13279				Keeper - Spring (.156")					1
24-45	F-1832 $\frac{1}{2}$				Link - Calculating Count Arm Connecting					1
24-46	1-12576				Spacer - Flat (.028")					1
					Latch Assembly - Index Control Lift Arm					1
<p>B - Calculating Slide Assemblies #1-13489, #1-13487, #1-13482 and #1-13485 are used on machines above serial #1781-942.</p> <p>Calculating Slides #13275, #13274, #13273 and #13272 are used on machines between serial #1468-846 and #1781-942.</p> <p>Calculating Slides #12632, #12474, #12060 and #12061 are used on machines below serial #1468-846.</p> <p>C - Tubular Spacer #13110 is used on machines above serial #1468-846. Spacer #12168 is used on machines below this serial number.</p> <p>D - Calculating Cam Shaft Spring #12854 is used on machines above serial #1297-732. Spring #12396 (illustrated at left) is used on machines below this serial number.</p> <p>E - Calculating Count Arm Connecting Link #13279 is used on machines with Base Cover #1-13296. (A few machines between serial #1468-846 and #1581-661 using Base Cover #1-13357 and #1-12652 use a #1-13296 special.) For machines below serial #1468-846, order #12812 Link.</p>										

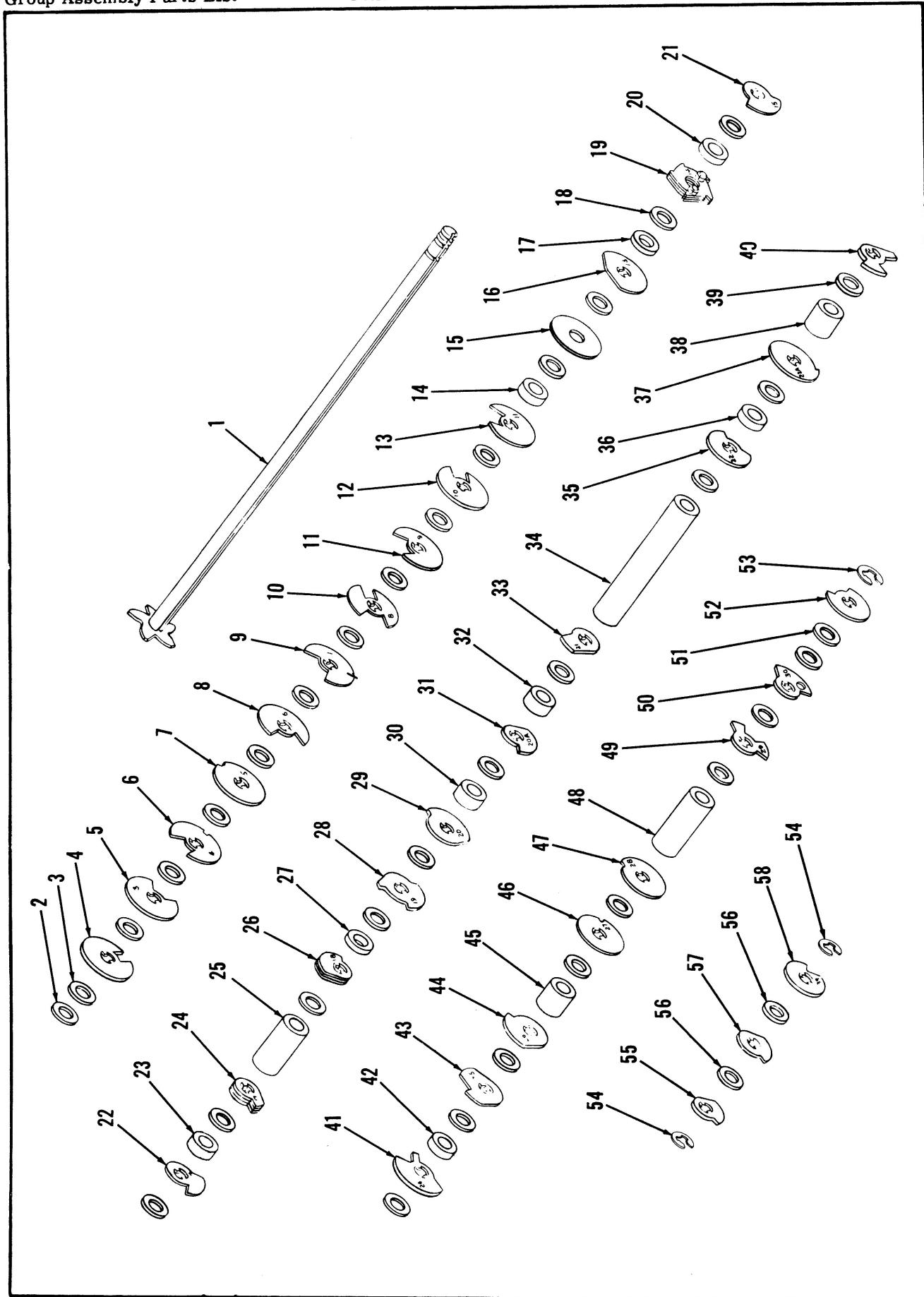


FIGURE 25

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
25 A	1-13478	Shaft Assembly Complete - Calculating Cam								1
25- 1	1-12305	Shaft Assembly - Calculating Cam								1
25- 2	12373	Spacer - Calculating Cam								1
25- 3	12050	Spacer - Calculating Cam								30
25- 4	12791	Clear Cam - Multiplier (#2)								1
25- 5	12350	Clear Cam - Quotient (#3)								1
25- 6	12351	Add Cam - Multiplier (#4)								1
25- 7	12352	Add Cam - Quotient (#5)								1
25- 8	12353	Add Cam - Multiplicand (#6)								1
25- 9	12354	Add Cam - Divisor (#7)								1
25-10	12355	Sub - Total Cam - Multiplicand (#8)								1
25-11	12356	Sub - Total Cam - Divisor (#9)								1
25-12 B	13474	Clear Cam - Multiplicand (#10)								1
25-13 B	13477	Clear Cam - Divisor (#11)								1
25-14	12374	Spacer - Calculating Cam (.166")								1
25-15	13042	Spacer - Flat (.035")								1
25-16	12358	Cam - Index Stop (Division) (#13)								1
25-17	12375	Spacer - Calculating Cam (.042")								1
25-18	12373	Spacer - Calculating Cam								1
25-19	1-12567	Ratchet Assembly - Calculating Cam Shaft Feed (#14)								1
25-20	12376	Spacer - Calculating Cam (.095")								1
25-21	12359	Cam - Non-Print & Paper Feed (Mult.) (#15)								1
25-22	12866	Cam - Non-Print & Paper Feed (Div.) (#16)								1
25-23	12377	Spacer - Calculating Cam (.136")								1
25-24	12361	Cam - Index Control (#17)								3
25-25	12378	Spacer - Calculating Cam (.798")								1
25-26	12867	Cam - Index Stop Reset (#18)								3
25-27	12379	Spacer - Calculating Cam (.060")								1
25-28C	13374	Cam - Lock Plate (Mult.) (#19)								1
25-29C	13375	Cam - Lock Plate (Div.) (#20)								1
25-30	12876	Spacer - Calculating Cam								1
25-31	13026	Cam - Index Control Drive Arm Lock Slide								1
25-32	12876	Spacer - Calculating Cam								1
25-33	12870	Cam - High Order Index Stop Set (#21)								1
25-34	12877	Spacer - Calculating Cam								1
25-35	12871	Cam - Multiply (#22)								1
25-36	12383	Spacer - Calculating Cam (.119")								1
25-37	12792	Cam - Multiplier Remainder Clear (#22A)								1
25-38	12381	Spacer - Calculating Cam (.246")								1
25-39	12387	Spacer - Calculating Cam								1
25-40	12872	Cam - Non-Add (Mult.) (#23)								1

(Continued on following page)

A - Calculating Cam Shaft #1-13478 is used on machines above serial #1781-942 or with machines using Register Disengaging Blocks on the Calculating Slides. Calculating Cam Shaft #1-13376 is used on machines below serial #1781-942.

B - Multiplicand Clear Cam (#10) #12357 and Division Clear Cam (#11) #12529 are used in Calculating Cam Shaft #1-13376.

C - Multiplicand Lock Plate Cam (#19) #12868 and Division Lock Plate Cam (#20) #12869 are used in Calculating Cam Shaft #1-12875.

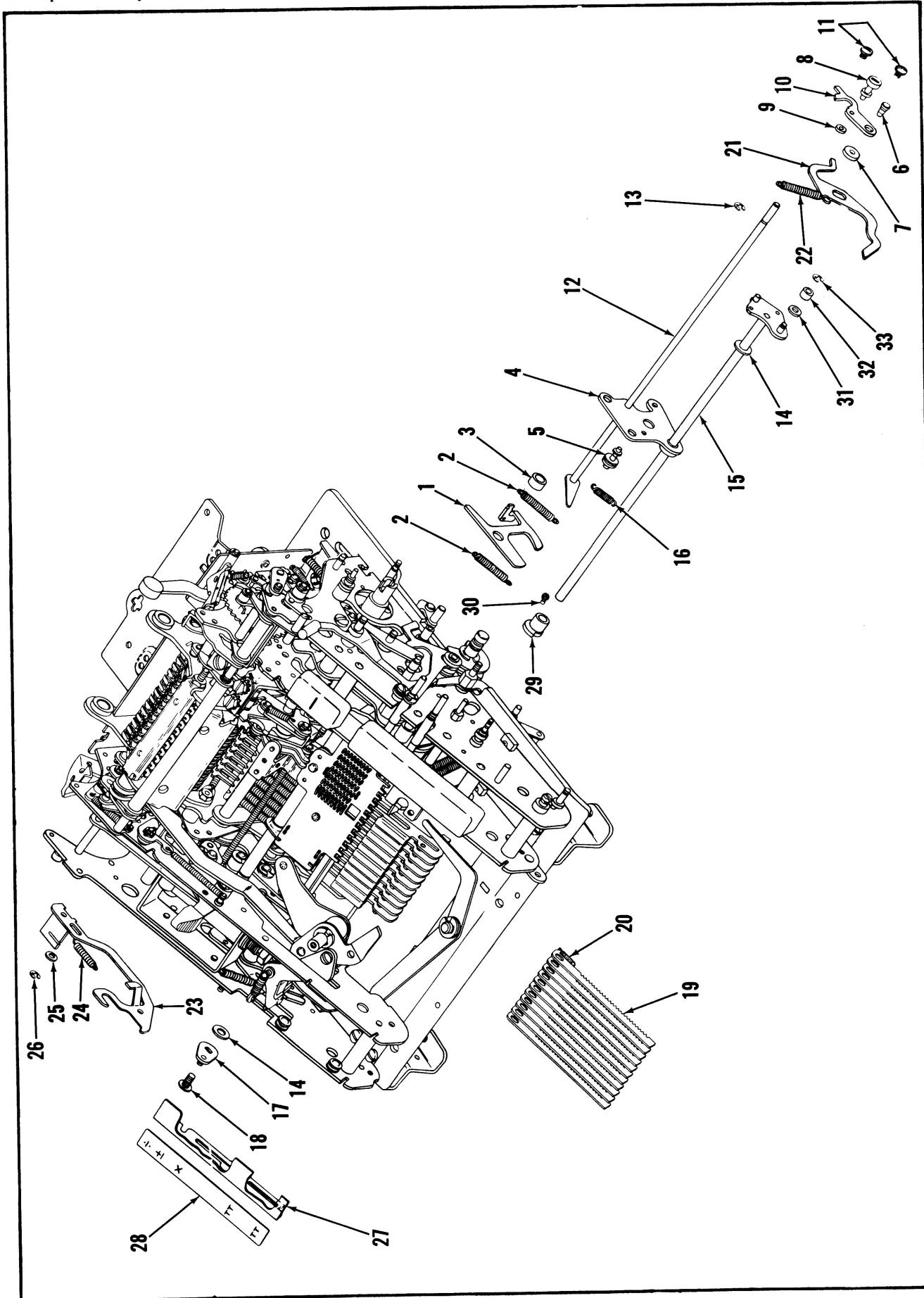


FIGURE 26

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CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
(Continued from preceding page)										
25-41	12367	Cam - Non-Add (Div.) (#24)								1
25-42	12383	Spacer - Calculating Cam (.119")								1
25-43 D	12368	Cam - Keyboard Lock (Mult.) (#25)								1
25-44 D	12369	Cam - Keyboard Lock (Div.) (#26)								1
25-45	12384	Spacer - Calculating Cam (.382")								1
25-46	12207	Cam - Multiply Stop (#27)								1
25-47	12208	Cam - Division Stop (#28)								1
25-48	12385	Spacer - Calculating Cam (1.035")								1
25-49	12370	Cam - Motor Trip (Multiply) (#29)								1
25-50	12386	Cam - Motor Trip (Divide) (#30)								1
25-51	12379	Spacer - Calculating Cam (.060")								1
25-52	12895	Cam - Auto-Total (#31)								1
25-53	7020	Keeper - Spring (.250")								1
25-54	7019	Keeper - Spring (.1875")								2
25-55 E	25321	Cam - Subtract Key Latch (Mult.) (#32)								1
25-56	12050	Spacer - Calculating Cam (.015")								2
25-57 E	12874	Cam - Subtract Key Latch (Div.) (#33)								1
25-58 E	12372	Cam - Subtract (#34)								1
(Continued on following page)										
26- 1	12858	Cam - Motor Trip Pivot								1
26- 2	481	Spring (.500", .011" Wire)								2
26- 3	12276	Spacer - Tubular (.200")								1
26 A	1-12826	Support Assembly Complete - Right Control								1
26	1-12825 *	Support Assembly - Right Control								1
26- 4	12823 *	Support - Right Control								1
26- 5	12824	Stud - Spring								1
26- 6	12278	Rivet								1
26- 7	12279	Spacer - Flat (.062")								1
26	1-12822	Pivot Cam Assembly - Auto-Subtract								1
26- 8	12820 *	Pin - Auto-Subtract Cam Pivot								1
26- 9	12821	Washer - Auto-Subtract Cam Pivot (Eccentric)								1
26-10	12819 *	Pivot Cam - Auto-Subtract								1
26-11	12640	Screw - Binding Head (.125")								2
26-12	1-12728	Drive Link Assembly - Auto-Total								1
26-13	7017	Keeper - Spring (.125")								1
26-14	1290 $\frac{1}{4}$	Spacer - Flat (.010") (Adjustment Spacers #S-282 $\frac{1}{2}$ (.008"), #1268 $\frac{1}{2}$ (.015"), #1918 $\frac{1}{2}$ (.020") and #7519 (.005") are available).								2
26-15 B	1-13073	Shaft Assembly - Total Control								1

A - Order #1-13125 Right Control Support Assembly for multiplier models.
 B - Total Control Shaft #1-13073 containing an Adjustment Roller, replaced Total Control Shaft #1-12743. Order Total Control Shaft #1-13073 and Total Selector #1-9266 if replacement of #1-12743 is required.
 C - Multiplicand Lock Plate Cam (#19) 12868 and Division Lock Plate Cam (#20) #12869 are used in Calculating Cam Shaft #1-12875.
 D - Keyboard Lock Cam (#25) #12368 and Keyboard Lock Cam (#26) #12369 are not individually replaceable. Replace both Cams if replacement of one is required.
 E - Subtract Key Latch Cam (#32) #25321, Subtract Key Latch Cam (#33) #12874, and Subtract Cam (#34) #12372 are not individually replaceable. Replace all three Cams if replacement of one is required.

* This part, or assembly, is not individually replaceable in this location. Order the next highest assembly that is replaceable.

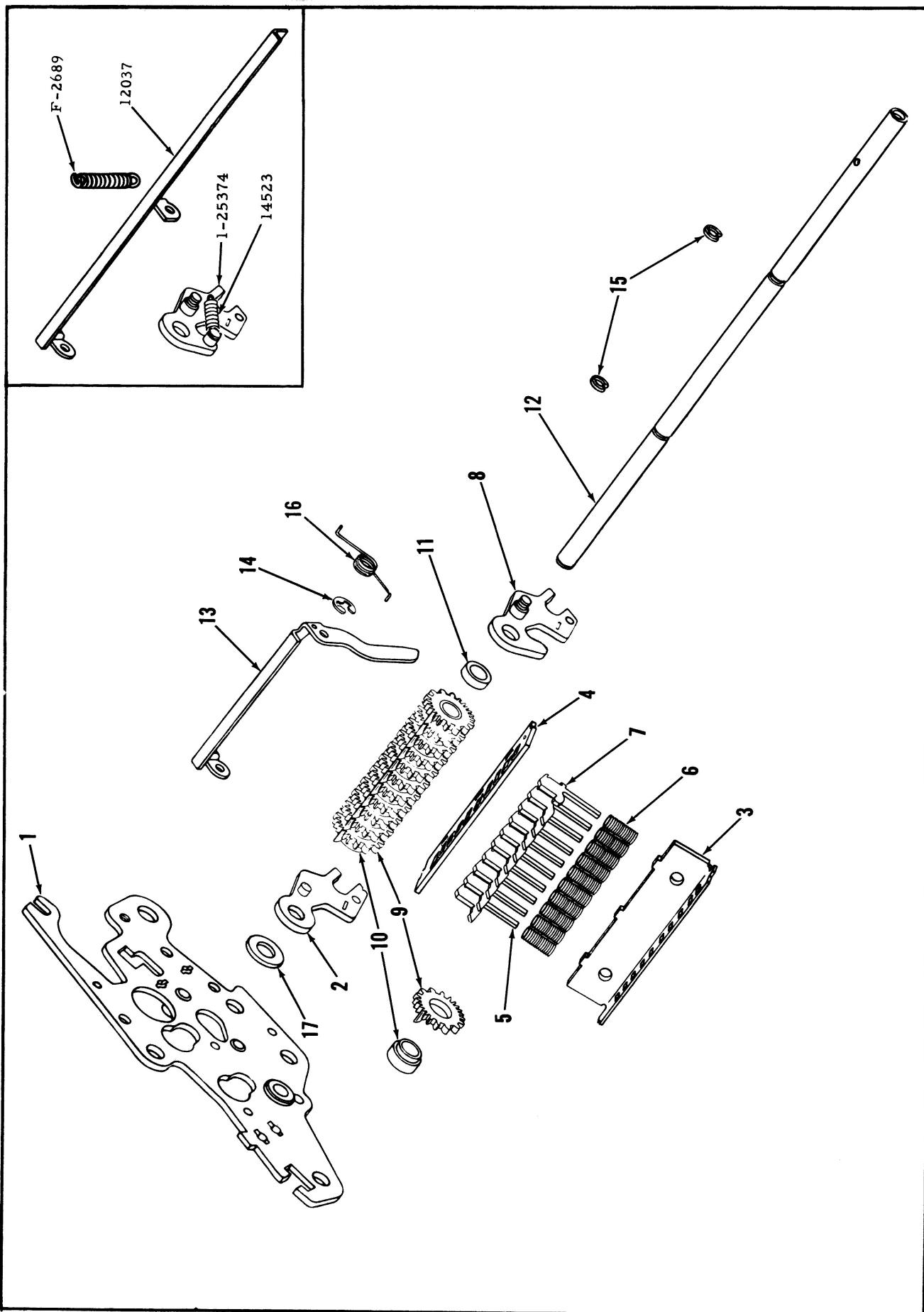


FIGURE 27

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
(Continued from preceding page)										
26-16	253									1
26-17	1-12574	Spring (.468", .013" Wire)								1
26-18	7077	Pivot Assembly - Auto Total Drive								1
26-19	12003	Screw - Binding Head (.250")								1
26-20	12494	Racks - Calculating								11
26-21	12830	Spring (.175", .088" Wire)								11
26-22	8103	Arm - Stop Key Subtraction Release								1
26-23 C	13175	Spring (.336", .016" Wire)								1
26-24	4734	Slide - Index Control Drive Arm Lock								1
26-25	12501	Spring (.459", .010" Wire)								1
26-26	7017	Spacer - Flat (.008")								1
26-27 D	1-13341	Keeper - Spring (.125")								1
26-28 D	13336	Slide Assembly - Identification								1
26-29	12787	Name Plate - Adhesive								1
26-30	F-769 $\frac{1}{2}$	Latch Release (Mult.) Remainder Clear Cam								1
26-31	F-1832 $\frac{1}{2}$	Screw - Round Head (.125")								1
26-32	9271	Spacer (Used in this location in Multiplier Models Only)								1
26-33	7017	Roller (.130") (Adjustment Rollers #3108 (.1875"), #8609 (.203"), #3813 (.218"), #3883 (.229") and #3885 (.250") are available)								1
27 A	1-13570	Keeper - Spring (.125")								1
27-1 A	1-25359	Calculating Section Unit (Multiplier #1-13565)								1
27 B	1-13564	Frame Assembly - Calculating (Left)								1
27 E	1-6342	Register Assembly - Multiplicand Gear (B)								1
27-2	1-25370	Bracket Assembly - Divisor Stop								1
27-3	12035	Frame Assembly - Multiplicand Gear (Left)								1
		Bracket - Divisor Stop								1
(Continued on following page)										
<p>A - Calculating Section Units #1-13570 and #1-13565 and Left Calculating Frame #1-25359 are used in machines above serial #2049-023.</p> <p>Calculating Section Units #1-13476 and #1-13473 and Left Calculating Frame #1-13472 are used in machines between serial number #1468-846 and #2049-023 or with machines using Pinned Type Register Clamps.</p> <p>Calculating Section Units #1-13182 (Calculator), #1-13183 (Multiplier) and Left Calculating Frame #1-12531 are used on machines below serial #1468-846 or machines using Screw Type Register Clamps.</p>										
<p>B - For machines below serial #2049-023, order #1-13535 Multiplicand (B) Register using #12037 Detent (illustrated in box)</p> <p>For Multipliers between serial #1124-396 and #1301-619, remove the #12708 Stop Key Escapement Dog Slide Release and #12700 Stop Key Escapement Dog Release Slide and its Spring #2483. For Multipliers below serial #1124-396 without "A" clear mechanism, the Over-Capacity Lug on the #1-13167 Multiplicand Gear Section Stop must be snapped off.</p>										
<p>C - Index Control Drive Arm Lock Slide #13175 is used on machines above serial #1387-000 or machines using Index Control Drive Arm & Link Assembly #1-13174. For machines below this serial number, order #13029 Lock Slide.</p> <p>D - For machines below serial #1532-929, order #1-13024 Identification Slide Assembly or #13023 Name Plate.</p> <p>E - For machines below serial #2049-023, order #1-6274 Divisor Stop Bracket.</p>										

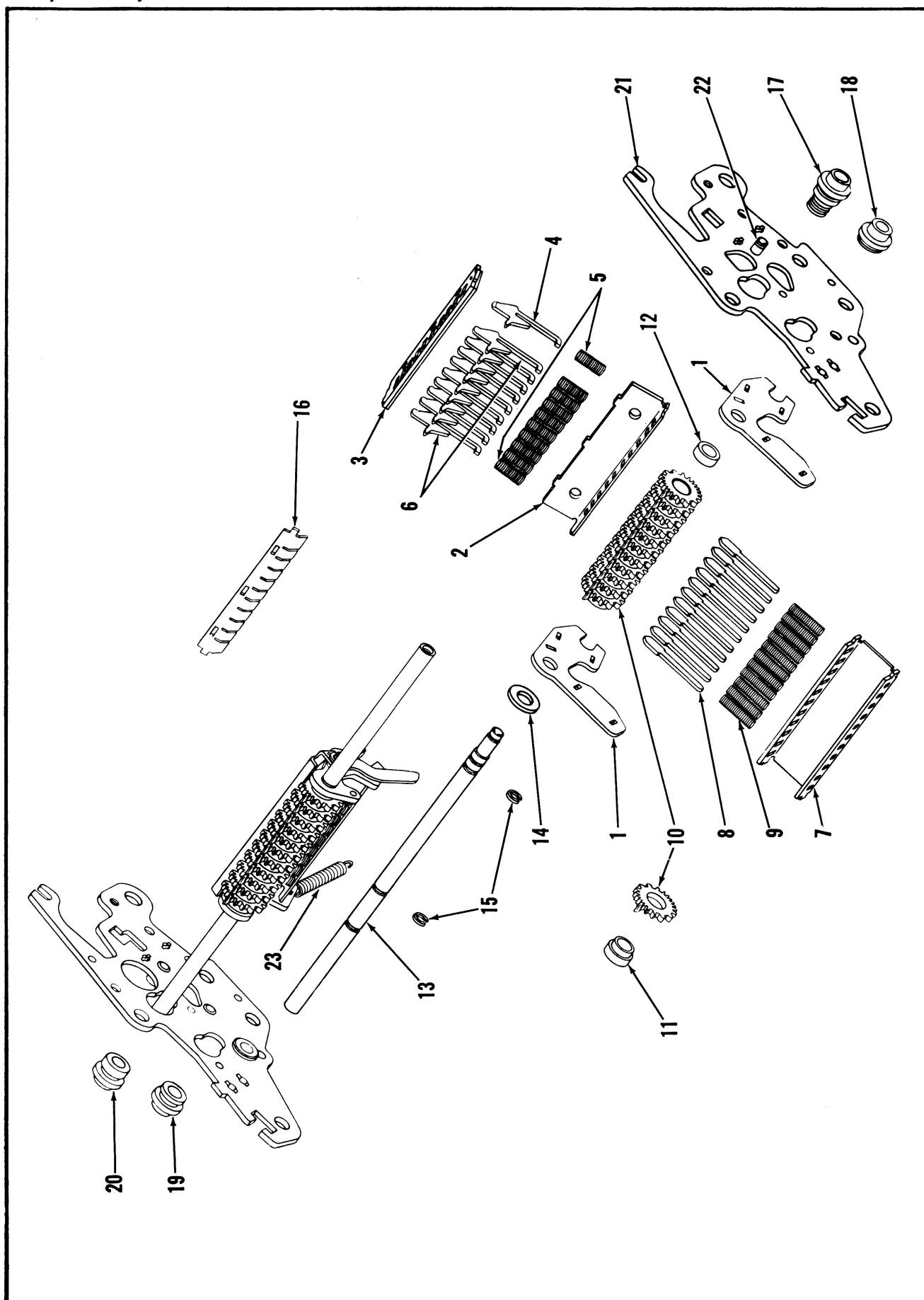


FIGURE 28

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
(Continued from preceding page)										
27- 4	13533									1
27- 5	13534									9
27- 6	25222									10
27- 7	12888									1
27- 8 A	1-25339									1
27- 9	12001									11
27-10	12002									11
27-11	12017									1
27-12	12031									1
27-13 A	25371									1
27-14	12575									1
27-15	90									1
27-16 A	25338									1
27-17	1290 $\frac{1}{4}$									AR
#7519 (.005") use #2772 Keeper in combination with Spacers to keep Assembly Rigid. Use on left side only.										
28	1-25411									1
28 B	1-6343									1
28- 1	13212									2
28- 2	12035									1
28- 3 B	1-25476									1
28- 4 B	25467									1
28- 5 B	25222									10
28- 6 B	25466									9
28- 7	12011									1
28- 8 B	25287									11
28- 9	12400									11
28-10	12001									11
28-11	12002									11
28-12	12017									1
28-13 B	25410									1
28-14	1290 $\frac{1}{4}$									AR
28-14	S-282 $\frac{1}{2}$									AR
28-14	7519									AR
28-15	90									2
28-16	13211									1
28-17	12719									1
28-18 B	25408									1
A - For machines below serial #2049-023, order Right Multiplicand Gear Frame #1-12532 Multiplicand Gear Detent #12037 (illustrated in box at left). Frame #1-25374 and Spring #14523 can be replaced with Current Frame and Spring.										
B - For machines below serial #2230-895, order parts listed in Brackets behind part description.										

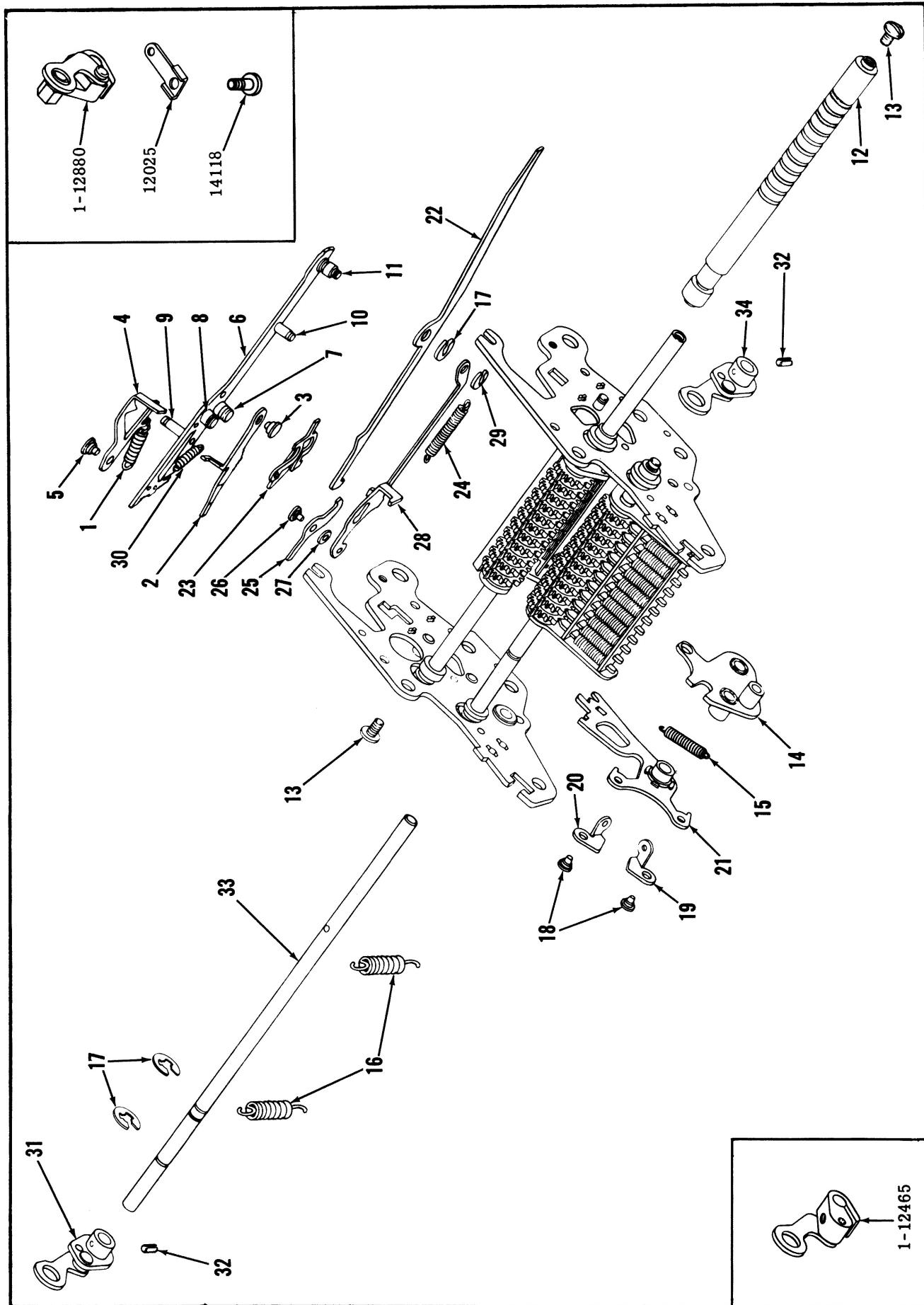


FIGURE 29

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
29- 1	5043				Spring (.218", .010" Wire)					1
29 A	1-13145				Support Assembly Complete - Division Escapement Arm (Multipliers #1-13167)					1
29- 2	12200				Arm - Division Escapement					1
29- 3	12201				Rivet - Shoulder					1
29- 4 A	13144				Dog - Division Escapement					1
29- 5	12205				Rivet - Shoulder					1
29- 6	13142 *				Support - Division Escapement					1
29- 7	12702				Stud - Shoulder					1
29- 8	12203				Stud - Shoulder					1
29- 9	12218				Stud - Shoulder Spring					1
29-10	8428				Stud - Spring					1
29-11	12701				Stud - Keeper					1
29-12	12014				Shaft - Calculating Gear Total Stop					1
29-13	3632				Screw - Binding Head (.187")					2
29-14	1-12540				Support Assembly - Multiplier Escapement Dog Shaft					1
29-15	5511				Spring (.203", .007" Wire)					1
29-16	25409				Spring (.512", .016" Wire)					1
29-17	7019				Keeper - Spring (.1875")					3
29 A	1-25379				Control Assembly Complete - Add Back Escapement					1
29-18	3588				Rivet - Shoulder					2
29-19	12078				Pawl - Over Subtract Escapement Control					1
29-20	12077				Pawl - Add Back Escapement Control					1
29-21	1-13150 *				Control Assembly - Add Back Escapement					1
29-22	12708				Release - Stop Key Escapement Dog Slide Control					1
29-23 A	1-13245				Lift - Escapement Dog					1
29-24	2483				Spring (.422", .010" Wire)					1
29 A	1-13148				Slide Assembly - Stop Key Escapement Dog Release					1
29-25 A	13147				Dog Release - Stop Key Escapement					1
29-26	12704				Rivet - Shoulder					1
29-27	3962				Spacer - Flat (.028")					1
29-28	12700 *				Slide - Stop Key Escapement Dog Release					1
29-29	7017				Keeper - Spring (.125")					1
29-30	4747				Spring (.188", .010" Wire)					1
29 B	1-25269				Shaft & Link Assembly - Gear Pivot ("A" Register)					1
29-31	1-13263 *				Pivot & Link Assembly - Gear (Left)					1
29-32	4213				Pin - Roll (5/64" x 3/8")					2
29-33 B	25208 *				Shaft - Gear Pivot					1
29-34	1-13264 *				Pivot & Link Assembly - Gear (Right)					1
A - For machines between serial #2049-023 & #2321-680, order #1-25363 Add-Back Escapement Control.										
For machines below serial #2049-023, order #1-13151 Add-Back Escapement Control.										
For machines below serial #1772-784, if any one of the parts marked "A" require replacement all parts marked "A" must be replaced.										
B - Gear Pivot Shaft & Link Assembly #1-25269 can only be used on machines above serial #1468-846 or machines using pinned clamps. For machines below this serial number or machines using Screw Type Clamps, order #1-12880 (Left) or #1-12465 (Right) illustrated at left.										
For machines below serial #1468-846 or machines using Screw Type Clamps, order #12033 Shaft.										

*This part, or assembly, is not individually replaceable in this location. Order the next higher assembly that is replaceable.

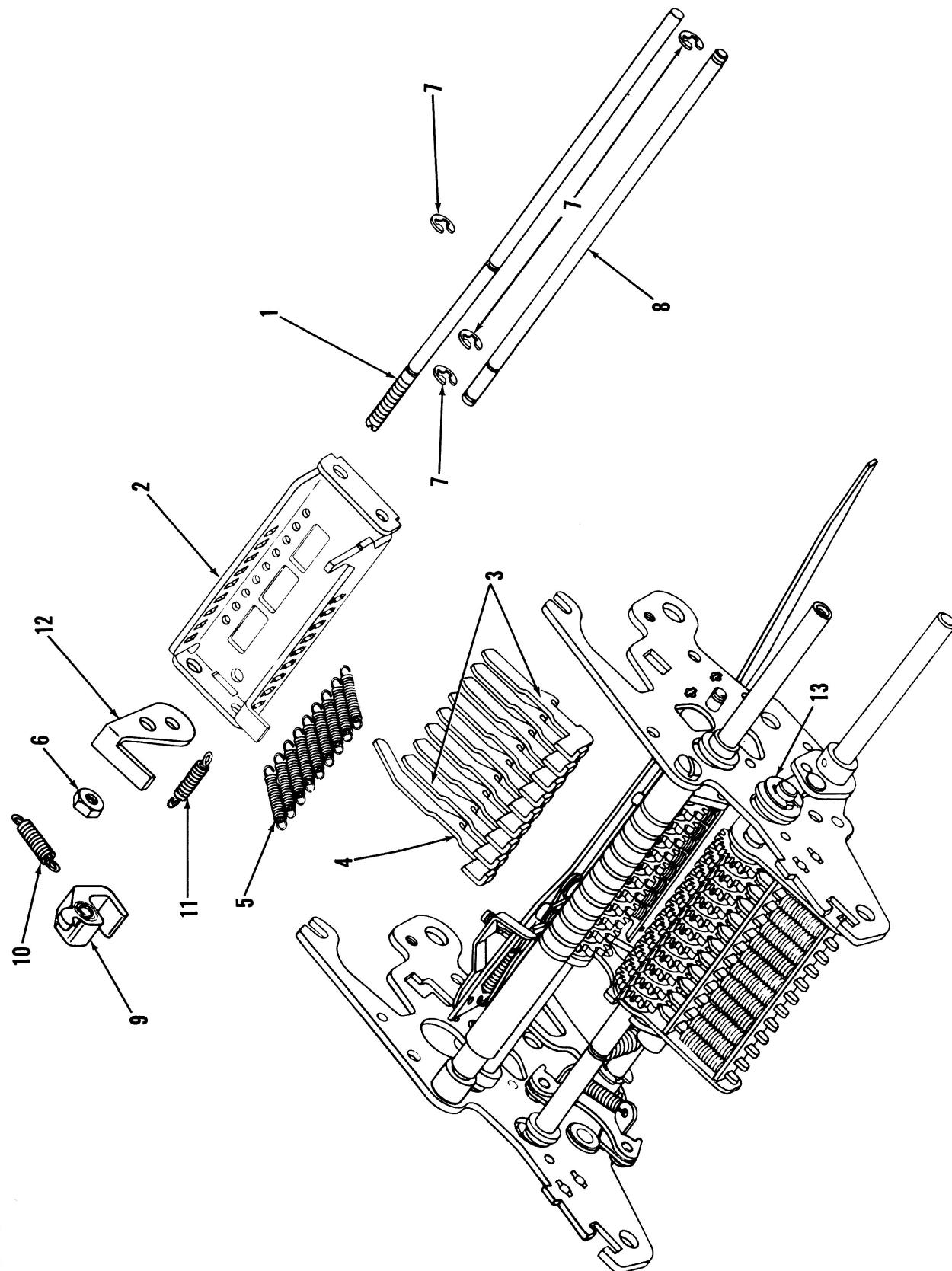


FIGURE 30

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
30- 1	12881									1
30	1-12654									1
30- 2	12215									1
30- 3	13122									8
30- 4	12886									1
30- 5	5043									9
30- 6	4226									1
30- 7	7017									4
30- 8	12027									1
30- 9 A	25377									1
30-10	9232									1
30-11	M-789									1
30-12 B	13097									1
30-13	7019									1
<p>A - For machines below serial #2049-023, order #12081 Add-Back Escapement Control Detent.</p> <p>B - Binding Head Screw #12963 is used to secure the #13097 Multiplicand Gear Section Lock to the Left Calculating Side Frame Assembly on Multiplier Models.</p>										

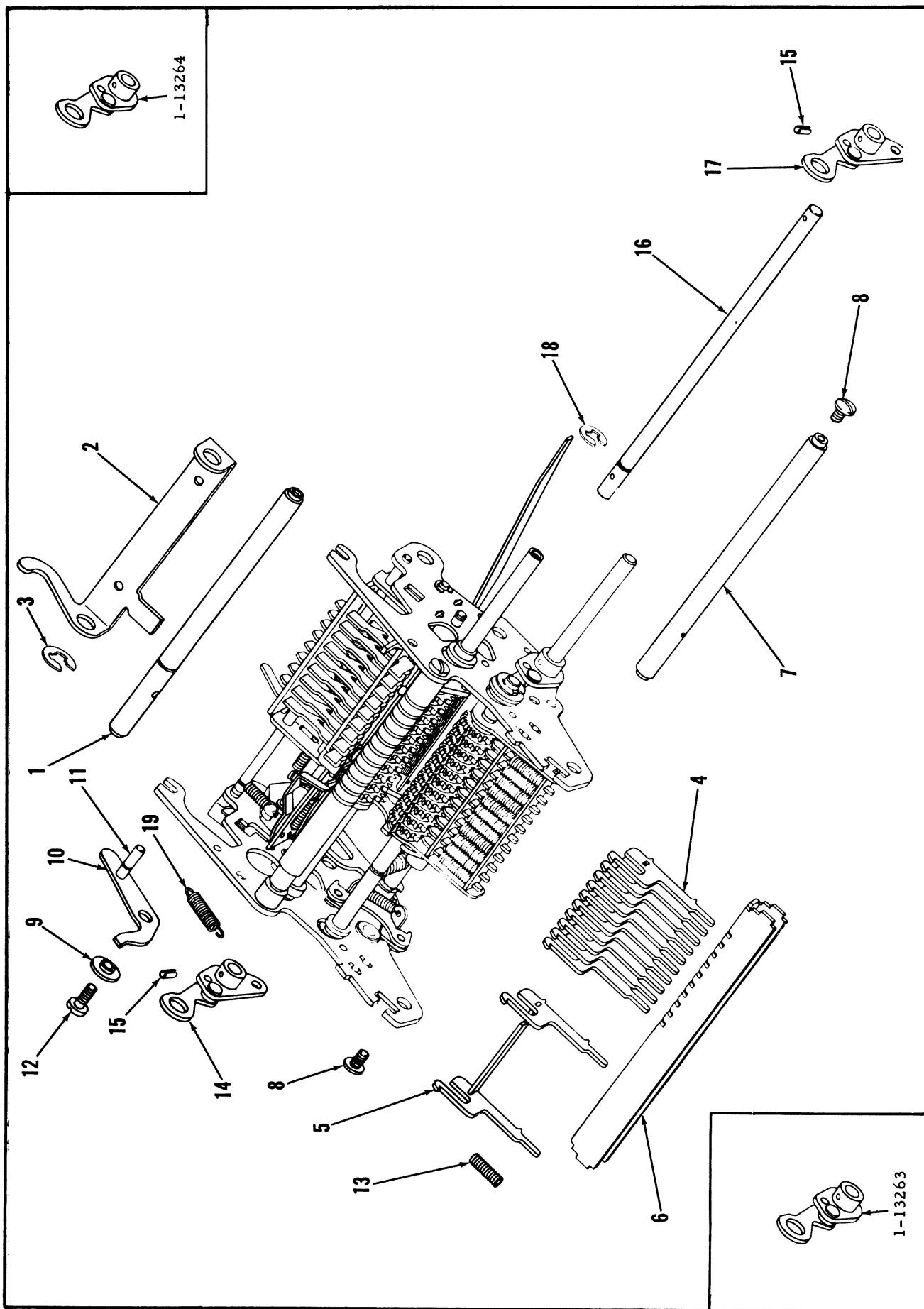


FIGURE 31

CUSTON LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
31- 1	12048	Shaft - Shoulder								1
31- 2	12216	Arm - Index Stop Reset Cam								1
31- 3	7020	Keeper - Spring (.250")								1
31- 4	12015	Stop - Calculating Gear Total								10
31- 5	1-12016	Guide Assembly - Calculating Gear								1
31- 6	12013	Calculating Rack Guide								1
31- 7	12725	Shaft - Shoulder - (Calculating Rack Stop)								1
31- 8	3632	Screw - Binding Head (.187")								2
31- 9	12195	Bearing - Escapement Shaft Connecting Arm								1
31	1-13099	Multiplicand Gear Section Lock Assembly								1
31-10	13098 *	Multiplicand Gear Section Lock								1
31-11	12715	Stud - Multiplicand Gear Section Lock								1
31-12	7077	Screw - Binding Head (.281")								1
31-13	13397	Spring - Compression								1
31 A	1-25368	Shaft & Link Assembly - Gear Pivot ("B" Register)								1
31-14	1-25367 *	Pivot & Link Assembly - Gear (Left)								1
31-15	4213	Pin - Roll (5/64" x 3/8")								2
31-16 A	13254 *	Shaft - Gear & Pivot								1
31-17	1-25365	Pivot & Link Assembly - Gear (Right)								1
31-18	7019	Keeper - Spring (.187")								1
31-19	13378	Spring (.532", .014" Wire)								1
<p>A - Gear Pivot Shaft & Link Assembly #1-13266 is assembled in machines between serial #1468-846 & #2049-023 or machines using #12037 "B" Register Detent. For machines below this serial number or machines using Screw Type Clamps, order #1-12880 (Left) and #1-12465 (Right), illustrated in Figure 29.</p> <p>For machines below serial #1468-846 or machines using Screw Type Clamps, order #12030 Shaft.</p>										
<p>* This part, or assembly, is not individually replaceable in this location. Order the next highest assembly that is replaceable.</p>										

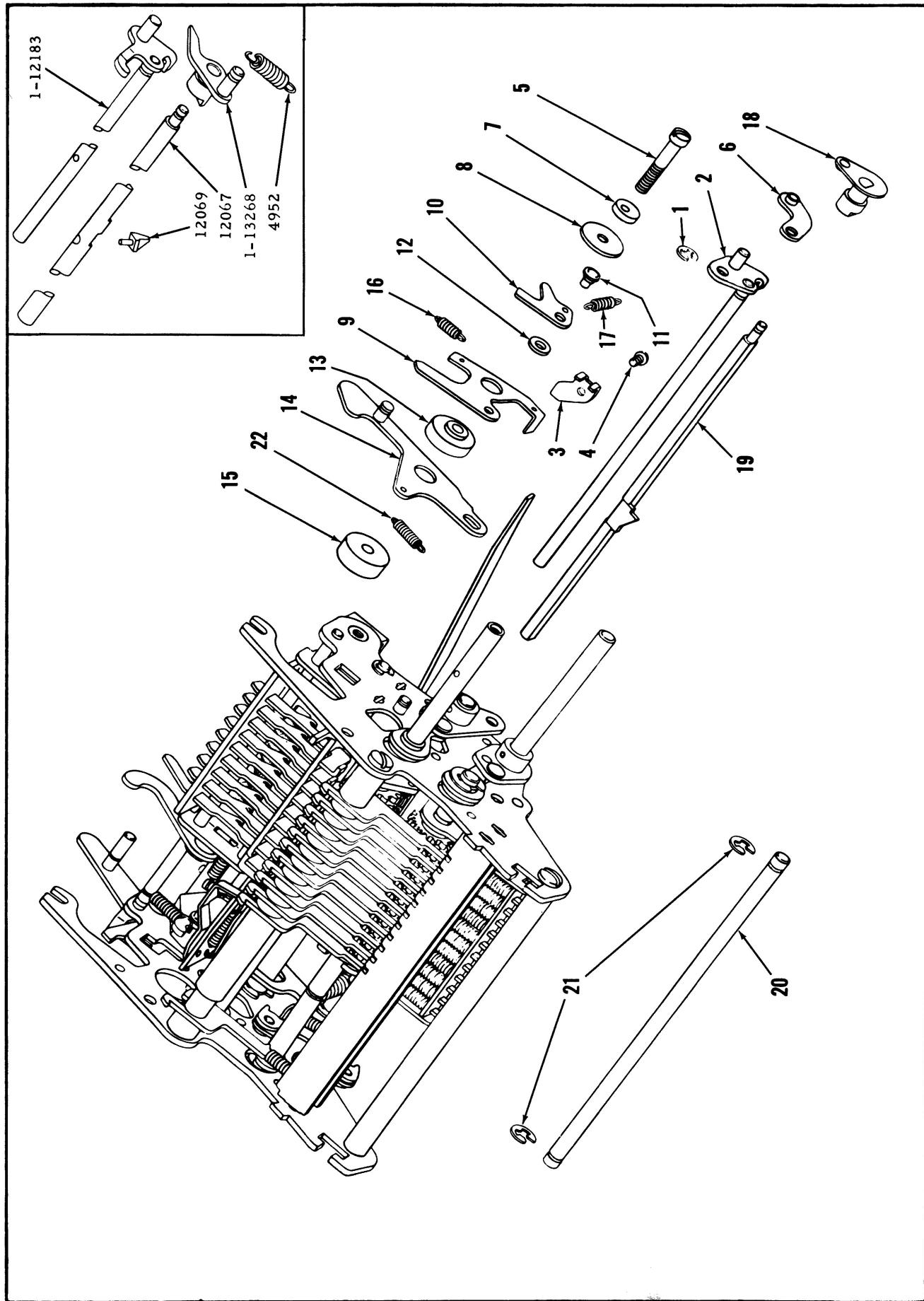


FIGURE 32

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
32- 1	7017					Keeper - Spring (.125")				1
32- 2 A	1-25463					Arm Assembly Complete - Lift Arm Shaft Control				1
32- 3	12148					Arm - Escapement Dog Lift				1
32- 4	13248					Screw - Binding Head (.141")				1
32- 5	12790					Screw - Binding Head (.125")				1
32- 6A	25460					Link - Multiplier Escapement Dog Shaft Arm				1
32- 7	12788					Stop - Eccentric (Used Only in Machines Below Serial#2117-723				1
32- 8 B	13591					Washer - Multiplier Remainder Clear Cam Latch Pawl				1
32- B	1-13594					Latch Assembly - Multiplier Remainder Clear Cam				1
32- 9 B	13593					Latch - Multiplier				1
32-10	12784					Pawl - Latch				1
32-11	12704					Rivet - Shoulder				1
32-12	3962					Washer (.028")				1
32-13 B	13592					Restore Blank Arm Eccentric Bearing				1
32-14	1-12783					Arm Assembly - Multiply Cam				1
32-15	13040					Spacer (.188")				1
32-15	5043					Spring (.218", .010" Wire)				1
32-17	3547					Spring (.187", .008" Wire)				1
32-18	1-25459					Arm Assembly - Escapement Dog Shaft				1
32-19	1-25473					Shaft Assembly - Multiplier Escapement Dog				1
32-20	25360					Shaft - Detent Disengaging				1
32-21	7018					Keeper - Spring (.156")				2
32-22	3541					Spring (.344", .008" Wire)				1

A - For machines below serial #2230-895 order parts or assemblies as illustrated in box.

B - For machines below serial #2117-723 order parts or assemblies as indicated:

#12789 Multiplier Remainder Clear Cam Latch Pawl Washer.

#1-12786 Multiplier Remainder Clear Cam Latch Assembly.

#12785 Multiplier Latch.

#13057 Restore Blank Arm Eccentric Bearing.

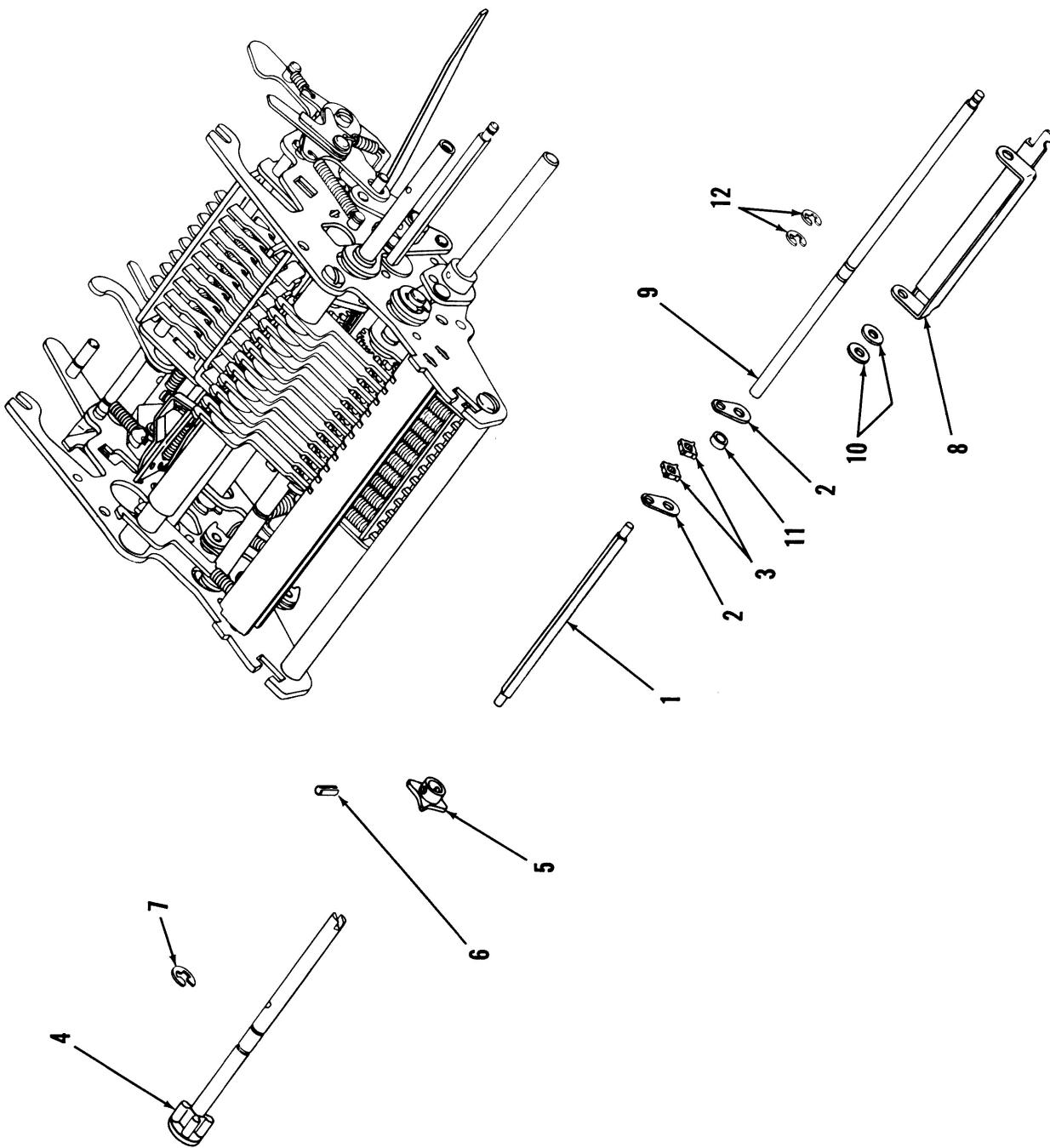


FIGURE 33

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
33- 1	12073									1
33- 2	12042	Shaft - Multiplier Index Pinion								2
33- 3	12010	Guide - Multiplier Index Pinion								2
33- A	1-25357	Pinion - Multiplier Index								
33- 4	1-13567 *	Ratchet Assembly - Escapement Pawl Trip								1
33- 5	12079 *	Disc Assembly Complete - Trip Ratchet Shaft Feed								1
33- 6	13241	Ratchet - Escapement Pawl Trip								1
33- 7	7018	Roll Pin (.062" x 1/4")								1
33- 8	12859	Keeper - Spring (.156")								1
33- 9	12043	Cradle - Calculating Stop Release								1
33-10	12501	Shaft - Multiplier Index Pinion Guide								1
33-11	12345	Spacer - Flat (.008")								2
33-12	7017	Spacer - Tubular (.067")								1
		Keeper - Spring (.125") (Use as many #7621 Keepers as necessary in place of #7017 to insure tight fit of #12042)								2

A - For machines below serial #2049-023, order #1-12075 Escapement Pawl Trip Ratchet.

* This part, or assembly, is not individually replaceable in this location. Order the next higher assembly that is replaceable.

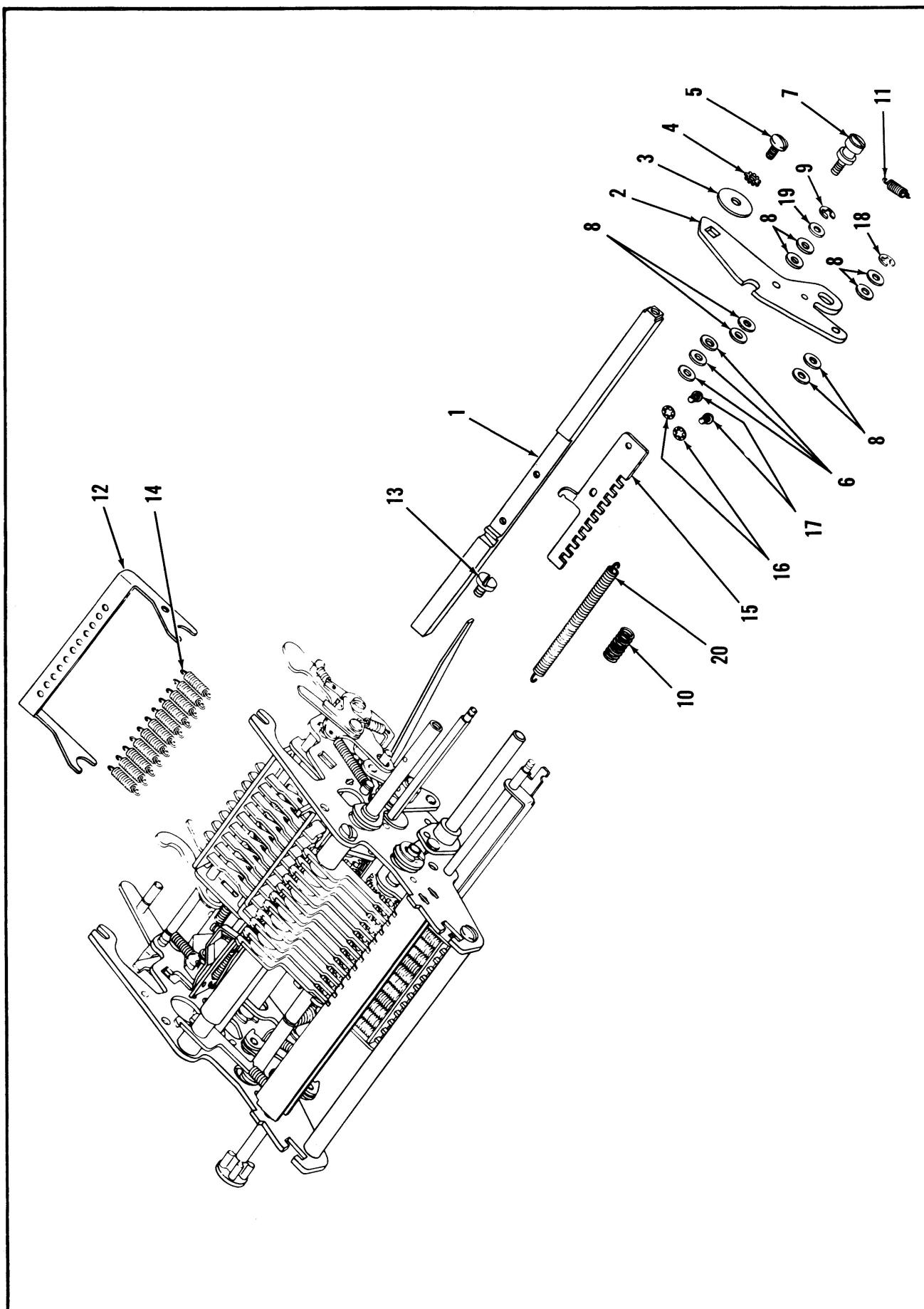


FIGURE 34

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
34- 1	12257			Shaft - Division Escapement Comb						1
34- 2	13181			Frame - Calculating (Outer)						1
34- 3 A	8533			Washer - Outer Calculating Frame						1
34- 4	13231			Washer - External Tooth Lock						1
34- 5	12730			Screw - Binding Head (.250")						1
34- 6	12501			Spacer - Flat (.008") Multiplicand Gear Shaft						3
34- 7	12046			Screw - Multiplicand Gear Shaft						1
34- 8	12485			Spacer - Flat (.008") Multiplier Escapement Dog Shaft						8
34- 9	13078			Keeper - Spring (.094")						1
34-10	12860			Spring - Compression						1
34-11	4952			Spring (.218", .008" Wire)						1
34-12 B	12206			Spring Retainer - Calculating Gear Total Stop						1
34-13	1243 ₁ ²			Screw - Binding Head (.187")						1
34-14 C	689			Spring (.250", .012" Wire)						11
34-15 D	12778			Comb - Division Escapement						1
34-16	7463			Washer - Internal Tooth Lock						2
34-17	13248			Screw - Round Head (.141")						2
34-18	12575			Keeper - Spring (.094")						1
34-19	25583			Spacer - Flat						1
34-20	12971			Spring (.1.275", .015" Wire)						1
<p>A - Order #12779 Washer for machines below serial #1396-955.</p> <p>B - When ordering #12206 Calculating Gear Total Stop Spring Retainer for machines below serial #1263-326, also order eleven #689 Springs.</p> <p>C - Order #157 Springs for machines below serial #1263-326.</p> <p>D - Order #12209 Division Escapement Comb for Multiplier Models.</p>										

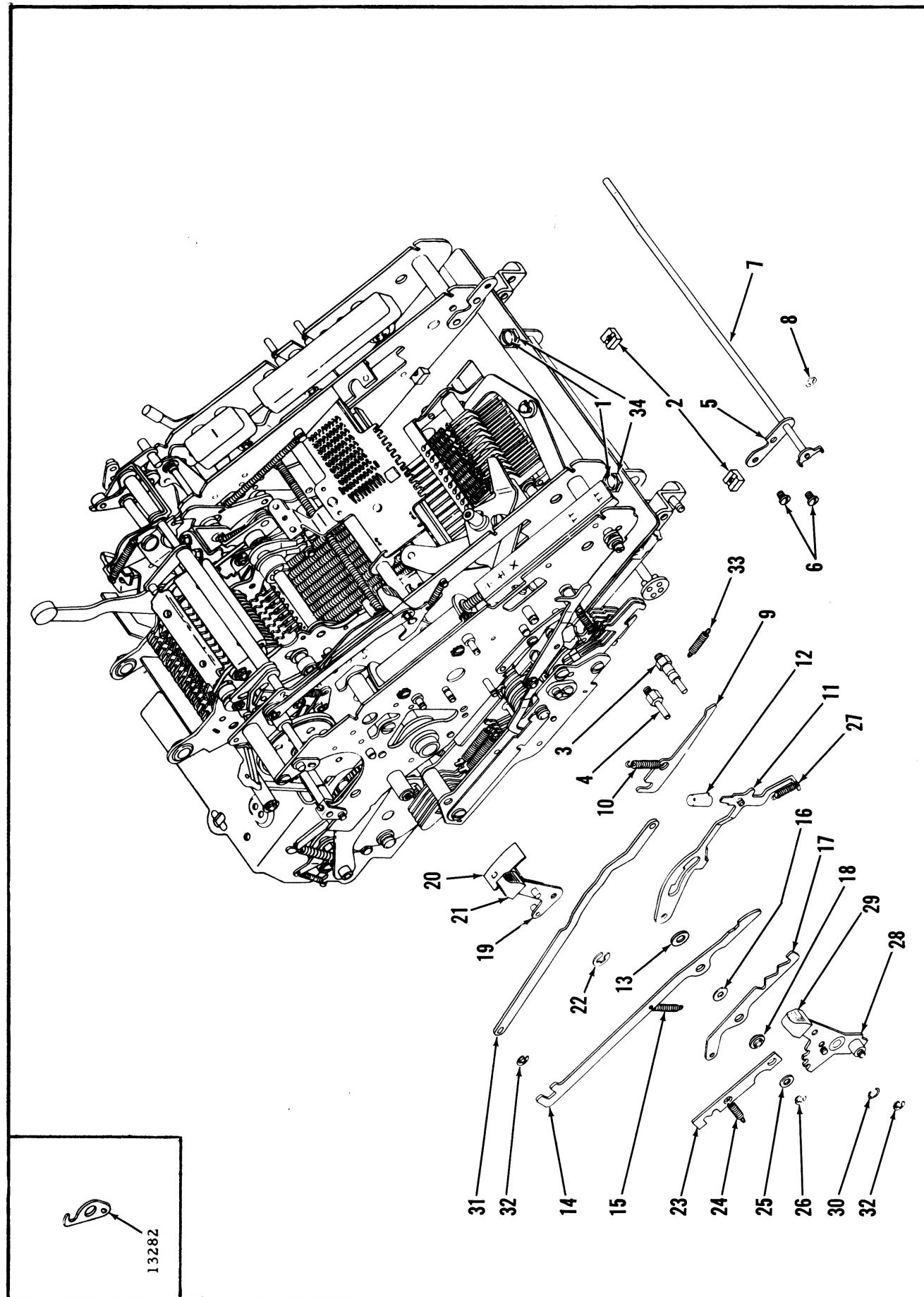


FIGURE 35

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
35- 1	6663	Screw - Binding Head (.250")								2
35- 2	5937	Nut - Special								2
35- 3 A	13563	Stud - Screw ("A" Register)								1
35- 4 A	25375	Stud - Screw ("B" Register)								1
35- 5	12104	Bracket - Auto- Total Selection Dog Shaft								1
35- 6	3781	Screw - Binding Head (.115")								2
35- 7	1-25335	Shaft Assembly - Auto-Total Selection Dog								1
35- 8	7017	Keeper - Spring (.125")								1
35- 9	12181	Locator - Multiplier Index Pinion								1
35- 10	3699	Spring (.468", .014" Wire)								1
35- 11 B	1-13360	Key Assembly - Total Transfer								1
35- 12	13350	Button - Total Transfer (Brown) (#13009 Green)								1
35- 13	1290 $\frac{1}{4}$	Spacer - Flat (.010")								1
35- 14	12173	Lock - Non-Add Key								1
35- 15	F3-82	Spring (.625", .010" Wire)								1
35- 16	F-1832 $\frac{1}{2}$	Spacer - Flat (.018")								1
35- 17	12237	Detent - Calculating Selector								1
35- 18	12238	Spacer - Shoulder (Calculating Selector Detent)								1
35- 19 C	1-13340	Key Assembly - Constant								1
35- 20	13337	Name Plate - Adhesive ("C") (Brown) (#13017 Red)								1
35- 21	13348	Button - Selection (Brown) (#12629 Green)								1
35- 22	7019	Keeper - Spring (.187")								1
35- 23	12244	Detent - Constant Key								1
35- 24	8103	Spring (.336", .016" Wire)								1
35- 25	3731	Spacer - Flat (.025")								1
35- 26	7017	Keeper - Spring (.125")								1
35- 27	689	Spring (.375", .013" Wire)								1
35- 28	1-12798	Selector Assembly - Calculating (Multiplier #1-13124)								1
35- 29	13348	Button - Selection (Brown) (#12629 Green)								1
35- 30	3987	Keeper - Wire								1
35- 31	12799	Arm Link - Signal Control Shaft								1
35- 32	7017	Keeper - Spring (.125")								2
35- 33	245	Spring (.625", .012" Wire)								1
35- 34	25403	Calculator Section Lock - Eccentric								2
<p>A - Screw Studs #13563 and #25375 are used on machines above serial #1468-846 or machines using Pinned Gear Pivot Shaft & Link Assemblies. For machines below this serial number using #1-12465 and #1-12880 Gear Shaft Connecting Link Clamps, order #12852 ("A" Register) and #12853 ("B" Register).</p> <p>B - Total Transfer Key #1-13161 is used on machines above serial #1419-300. Order #1-12577 Key for machines below this serial number.</p> <p>C - Constant Key #1-13340, brown name plate is used on machines above serial #1468-846. Key #1-13193, red name plate, is used on machines between serial #1418-607 and #1468-846. For machines below serial #1418-607, order #1-13018 Key.</p>										

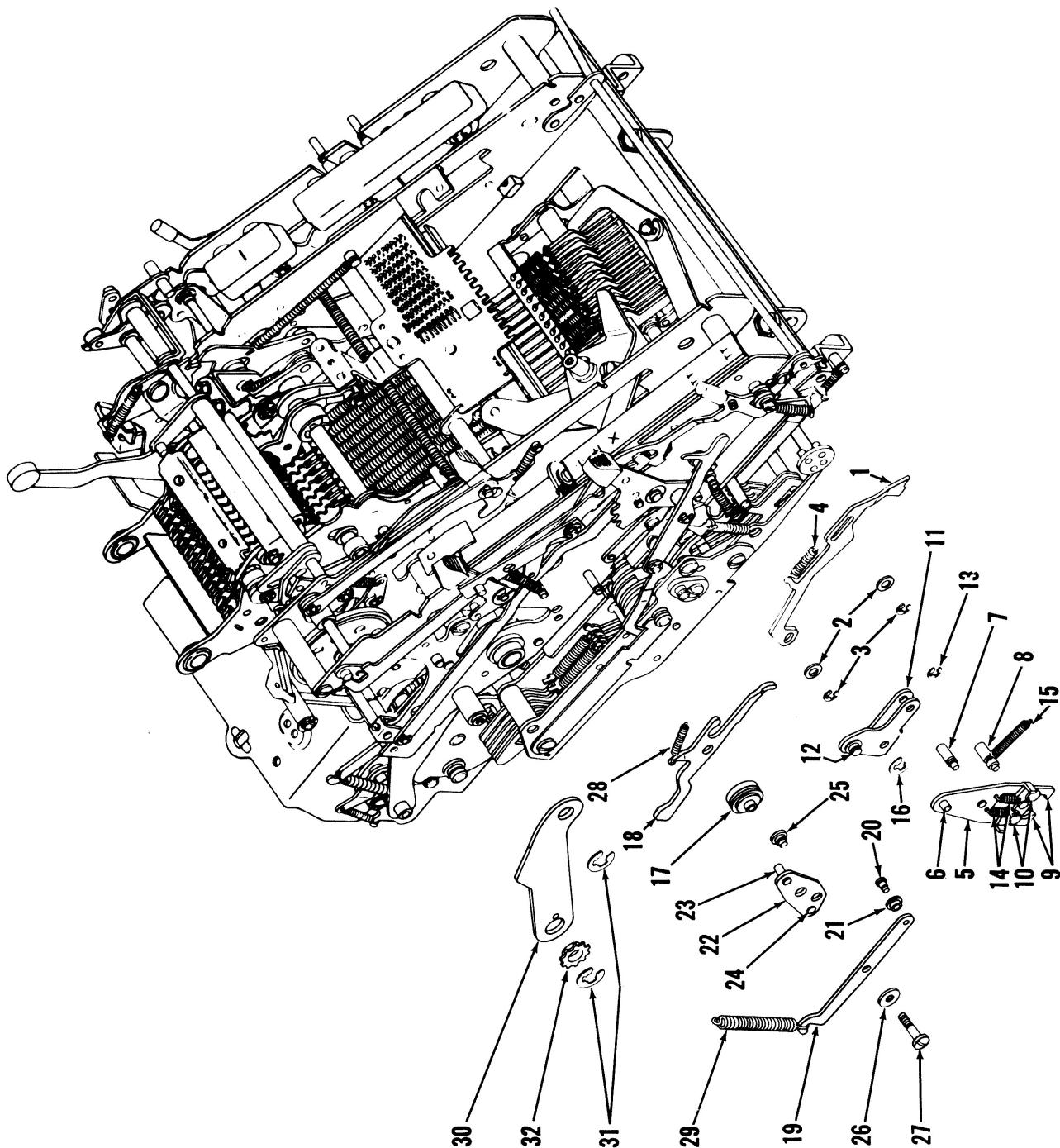


FIGURE 36

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
36- 1	13159	Trip - Auto-Total Selection Dog								1
36- 2	12501	Spacer - Flat (.008")								2
36- 3	7017	Keeper - Spring (.125")								2
36- 4	3664	Spring (.281", .011" Wire)								1
36	1-12667	Arm & Pawl Assembly Complete - Calculating Count								1
36	1-12472	Arm & Pawl Assembly - Calculating Count								1
36- 5	12170	Arm - Calculating Count								1
36- 6	2423 $\frac{1}{2}$	Stud								1
36- 7	12171	Stud - Spring Keeper								1
36- 8	12174	Stud - Spring								1
36- 9	12172	Pawl - Calculating Count Arm								2
36-10	7396	Rivet - Shoulder								2
36	1-12851	Arm Assembly - Calculating Count Pivot								1
36-11	12140	Arm - Calculating Count Pivot								1
36-12	12176	Stud - Shoulder Keeper								1
36-13	7017	Keeper - Spring (.125")								1
36-14	12494	Spring (.187", .005" Wire)								2
36-15	M-289	Spring (.406", .012" Wire)								1
36-16	7019	Keeper - Spring (.1875")								1
36-17	12114	Bearing - Constant Pivot								1
36-18	12228	Lever - Calculating Selector Lock Cam								1
36	1-12469	Constant Pivot Assembly Complete								1
36-19	12115	Link - Cam Shaft Locator								1
36-20	12116	Rivet - Shoulder								1
36-21	12117	Roller - Cam Shaft Locator Link (.072")								1
36-22	12113	Pivot - Constant								1
36-23	13169	Stud - Constant Pivot								1
36-24	4717	Stud								1
36-25	13624	Rivet - Shoulder								1
36-26	8756	Spacer - Flat (.016")								1
36-27	12182	Screw - Binding Head (.500")								1
36-28	481	Spring (.500", .011" Wire)								1
36-29	12460	Spring (.638", .022" Wire)								1
36-30 A	15658	Link - Drive								1
36-31	7020	Keeper - Spring (.250")								2
36-32 A	15657	Collar - Eccentric								1
<p>A - Drive Link #15658 and Eccentric Collar #15657 are used on machines above serial #1775-093 or machines using 1-15656 Motor Drive Plate. For machines below this serial number or machines using #1-12517 Motor Drive Plate, order #6175 (Short), #7047 (Standard), #7071 (Medium Long) and #7072 (Long) Drive Link.</p>										

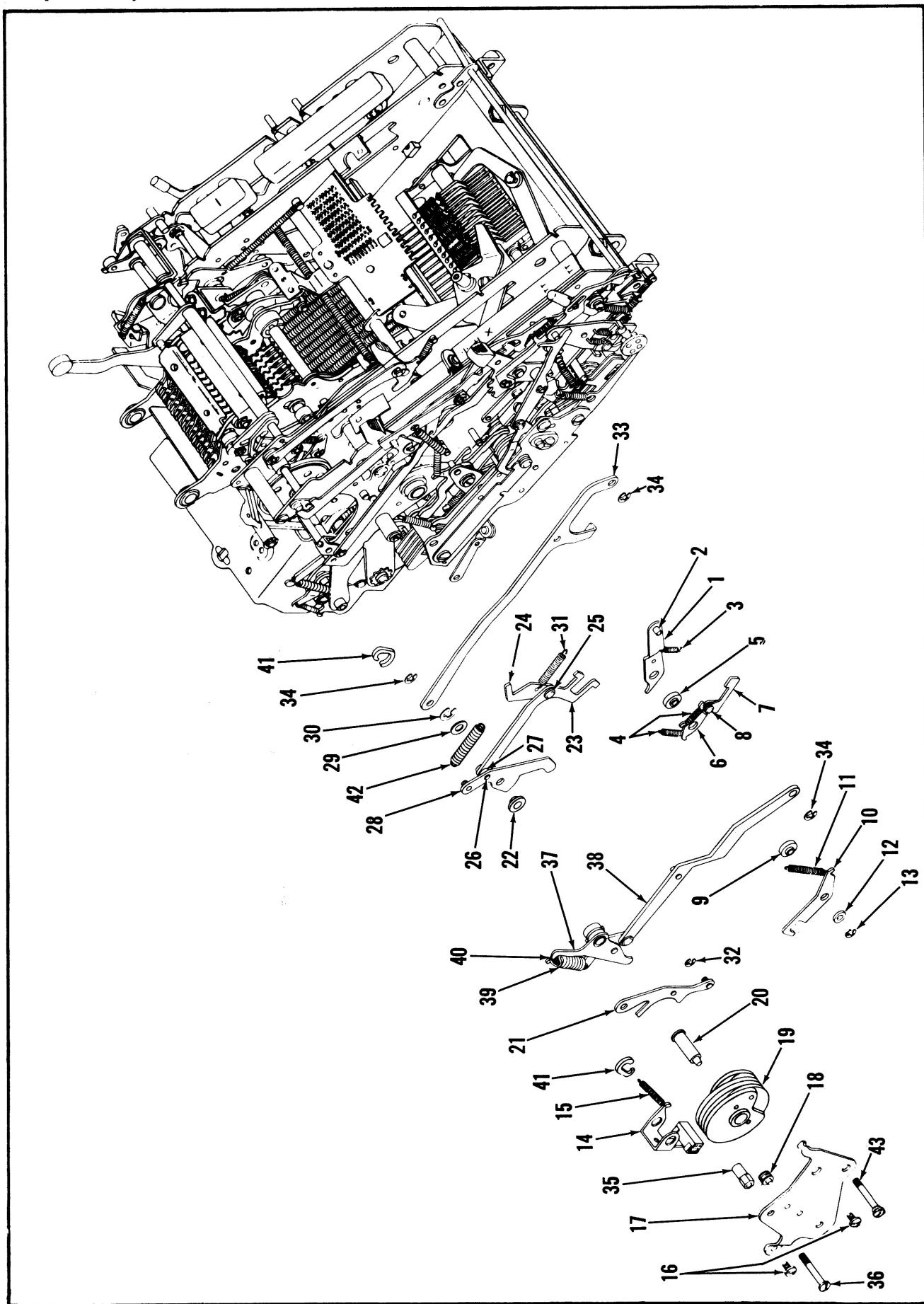


FIGURE 37

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
37	1-12556	Lock Assembly - Calculating Selector								1
37- 1	12132	Lock - Calculating Selector								1
37- 2	4699	Stud								1
37- 3	4952	Spring (.219", .008" Wire)								1
37- 4	5511	Spring (.203", .007" Wire)								1
37- 5	13013	Bearing - Calculating Selector Lock								2
37	1-12463	Latch Assembly - Calculating Count Arm								1
37- 6	12247	Lever - Calculating Count Cam Arm Latch Cam								1
37- 7	12246	Latch - Calculating Count Cam Arm								1
37- 8	13283	Rivet - Shoulder								1
37- 9	12135	Bearing - Constant Pivot Detent								1
37-10	12134	Detent - Constant Pivot								1
37-11	12475	Spring (.775", .019" Wire)								1
37-12	3731	Spacer - Flat (.025") (Adjustment Spacer #5965 (.025"))								1
37-13	7017	Keeper - Spring (.125")								1
37-14	1-12600	Wick Assembly								1
37-15	481	Spring (.500", .011" Wire)								1
37-16	3632	Screw - Binding Head (.281")								2
37 A	1-25275	Bracket Assembly Complete - Control Cam								1
37 A	1-13197	Bracket Assembly - Control Cam								1
37-17	12163 *	Bracket - Control Cam								1
37-18	12164 *	Stud - Control Cam Arm Guide								1
37-19	1-12488 *	Control Cam Assembly								1
37-20	12155 *	Bearing - Control Cam								1
37-21 A	1-25253	Cam Assembly - Index								1
37-22	13237	Spacer - Shoulder								1
37	1-13236	Control Lever Assembly - Constant Auto.								1
37-23	12239	Lever - Constant Auto Control								1
37-24	12242	Detent - Constant Auto								1
37-25	S-879 $\frac{1}{2}$ - 1	Rivet - Shoulder								1
37-26	12240	Rivet - Shoulder								1
37-27	12241	Spacer - Tubular (.115")								1
37-28	1-13235	Arm Assembly - Calculating Count Cam								1
(Continued on following page)										
<p>A - Control Cam Bracket Assembly Complete #1-25275 is used on machines above serial #1890-146.</p> <p>Index Cam Assembly #1-25253 is used on machines above serial #1890-146.</p> <p>To replace Control Cam Bracket Assembly Complete or component parts, order as indicated below.</p> <p>If machine is below serial #1387-000, order #1-25275 Control Cam Bracket Complete and #1-25256 Index Control Drive Arm & Link Complete.</p> <p>If machine is between serial #1387-000 and #1435-958, order #1-25275 Control Cam Bracket Complete and #1-25255 Index Control Drive Arm & Link, or #25254 Index Cam Link and #12187 Rivet.</p> <p>If machine is between serial #1435-958 and #1890-146, order #1-25275 Control Cam Bracket Complete, or #1-13197 Control Cam Bracket and #1-25255 Index Control Drive Arm and Link, or #25254 Index Cam Link and #12187 Rivet.</p>										
<p>* This part, or assembly, is not individually replaceable in this location. Order the next highest assembly that is replaceable.</p>										

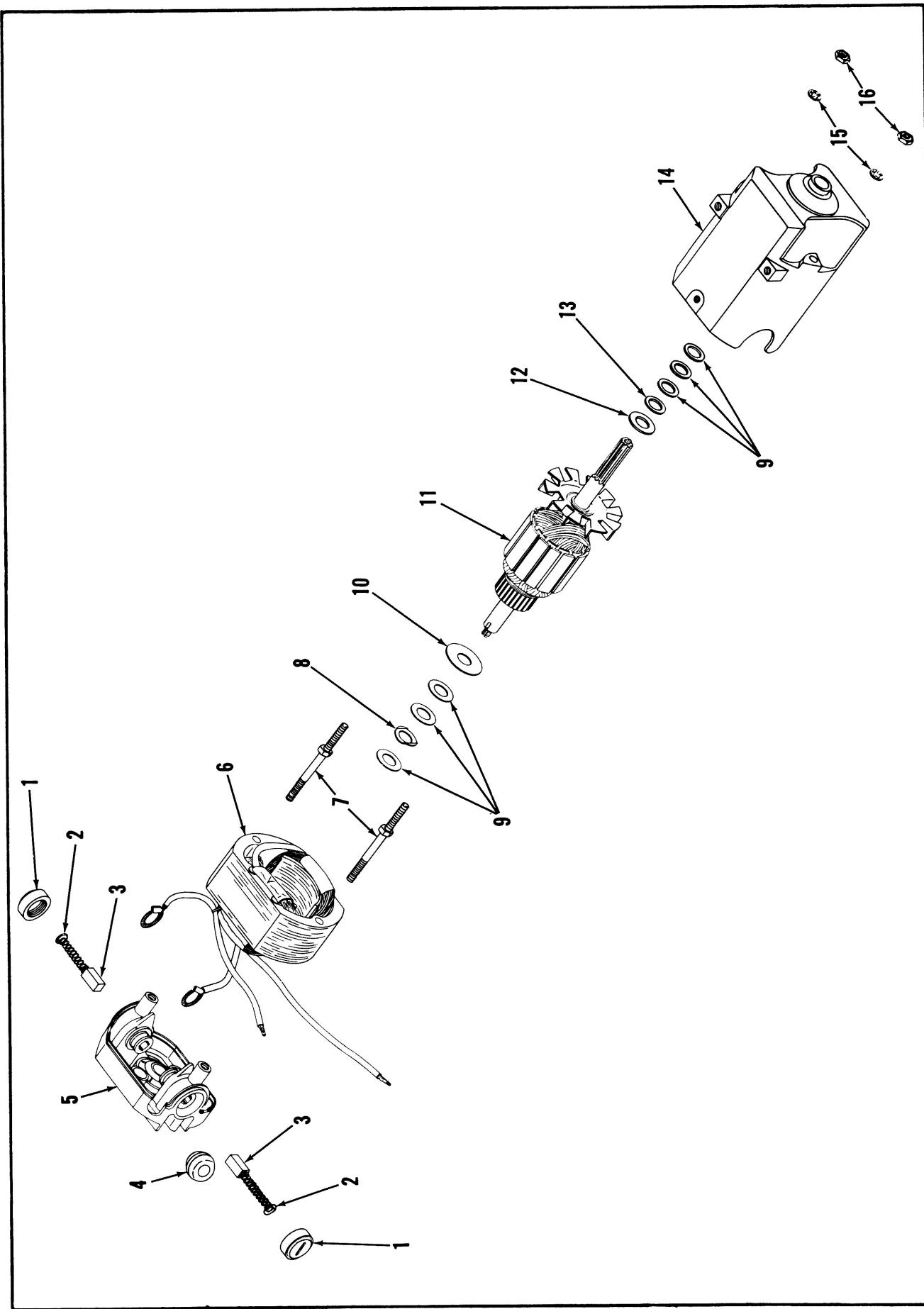


FIGURE 38

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
37-29	11307				(Continued from preceding page) Spacer - Flat (.042")		Adjustment Spacers S-282 $\frac{1}{2}$ (.008")			AR
							1290 $\frac{1}{4}$ (.010")			AR
							1268 $\frac{1}{2}$ (.015")			AR
							3925 (.020")			AR
							5617 (.030")			AR
37-30	7019				Keeper - Spring (.1875") (Adjustment Keepers #5781 and #5782)				1	
37-31	587				Spring (.343", .012" Wire)				1	
37-32	7017				Keeper - Spring (.125")				1	
37-33	12811				Link - Calculating Count Cam Arm				1	
37-34	7018				Keeper - Spring (.156")				3	
37-35	12167				Bearing - Total Control Cam Arm Eccentric				1	
37-36	12486				Screw - Binding Head (.812")				1	
37	1-13538				Arm Assembly Complete - Total Control Cam				1	
37-37	1-13190				Arm Assembly - Auto - Total Drive				1	
37-38	1-13537				Yield & Arm Assembly - Auto - Total Drive				1	
37-39	9094				Spring (.605", .055" Wire)				1	
37-40	3455				Spring (.687", .024" Wire)				1	
37-41	12268				Retainer - Spring				2	
37-42	13045				Spring (1.105", .026" Wire)				1	
37-43	13111				Screw - Shoulder (.880")				1	
38 A	1-13552-1				Motor and Governor Assembly Complete (115 Volt)				1	
38- 1	6306				Cap - Brush Holder (#6355, Singer)				2	
38- 2	6305				Spring - Armature Brush				2	
38- 3	6304				Brush - Armature (#1-6356, Singer)				2	
38- 4	6316				Grommet - Rubber				1	
38- 5	6317				Housing - Governor End				1	
38- 6 B	1-6303				Field Assembly (#1-6358, Singer)				1	
38- 7	6318				Screw - Housing Fastener				2	
38- 8	6319				Spacer - Spring				1	
38- 9	6320				Spacer - Flat					AR
38-10	6321				Spacer - Fibre				1	
38-11 C	1-6302				Armature Assembly (#1-6357, Singer)				1	
38-12	6324				Spacer - Flat				1	
38-13	6323				Spacer - Flat				1	
38-14	1-6341				Housing - Pinion End				1	
38-15	6326				Lockwasher				2	
38-16	6327				Nut - Hex				2	
					Parts List in brackets are used in Singer Motor. All other parts are used in Howard Motor.					
					For 230 Volt Howard Motor order the following part or assemblies as indicated:					
A	1-7946-2				Motor and Governor Assembly Complete.					
B	1-6328				Field Assembly.					
C	1-6329				Armature Assembly.					

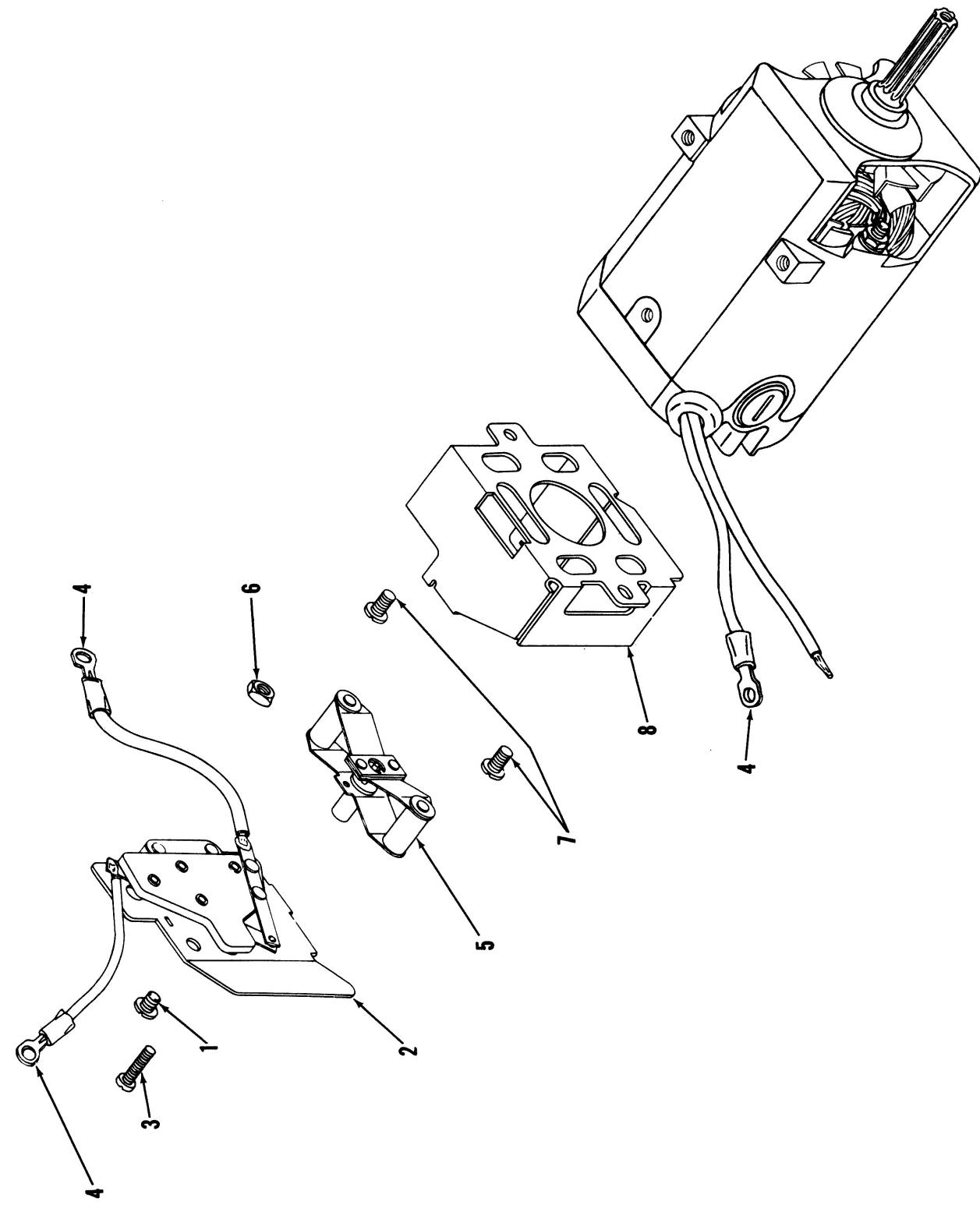


FIGURE 39

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
39- 1	2267				Screw - Binding Head (.135")					1
39- 2	1-9557			Contact Assembly - Governor						1
39- 3	9555			Screw - Governor Adjusting						1
39- 4	9512			Ring - Terminal						2
39- 5	1-9564			Governor Assembly						1
39- 6	2652			Nut - Hex						1
39- 7	6940			Screw - Binding Head						2
39- 8	9590			Housing - Governor Contracts						1

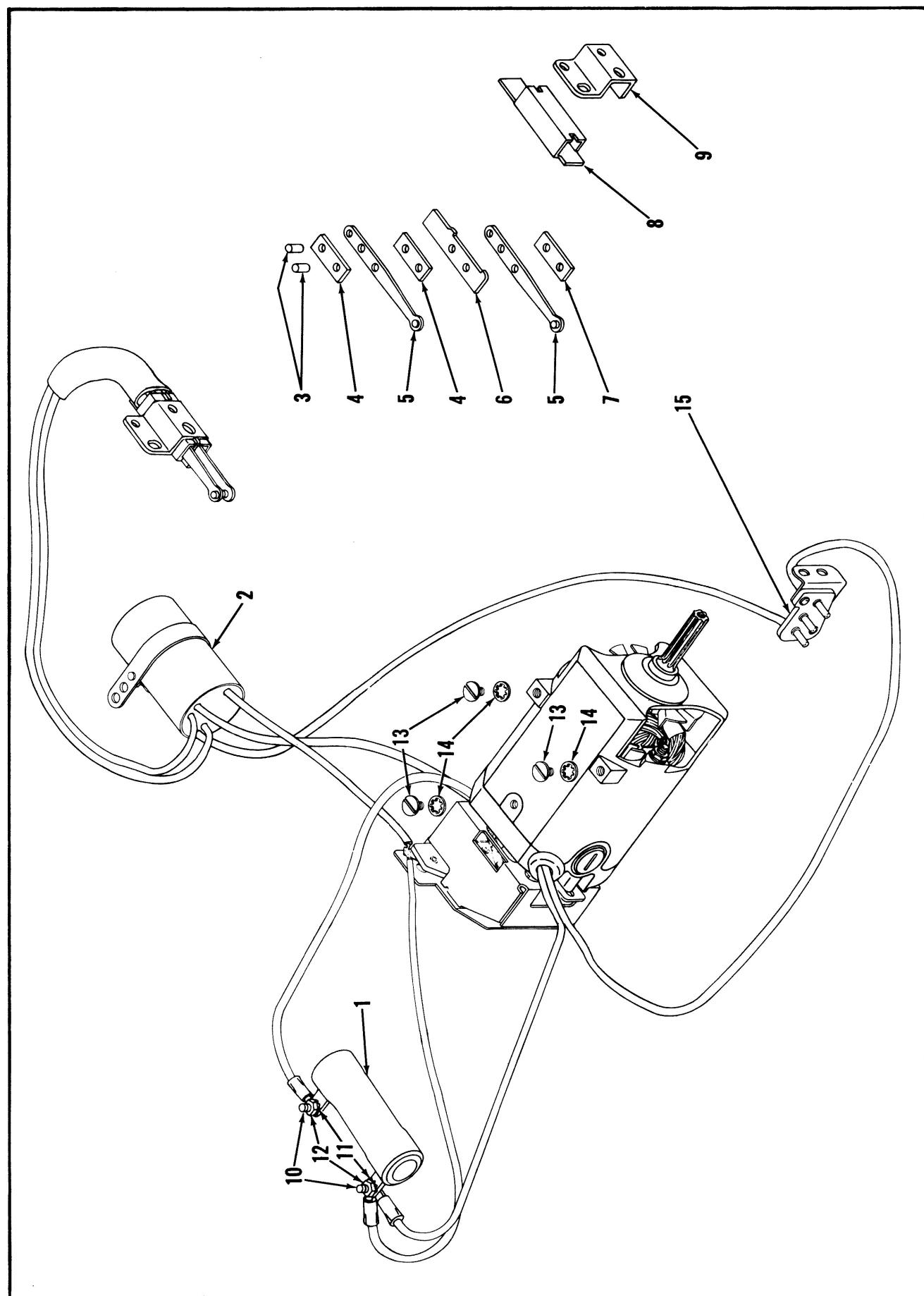


FIGURE 40

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
40- 1(a)	13035	Resistor								1
40	1-8887	Capacitor and Switch Points Assembly								1
40- 2	9574	Capacitor								1
40- 3	6573	Pin - Dowell								2
40- 4	6571	Insulator - Contact Finger								2
40- 5	1-6712	Finger Assembly - Contact								2
40- 6	7998	Spacer - Contact Finger								1
40- 7	6965	Insulator - Contact Finger								1
40- 8	8487	Insulator - Switch Holder								1
40- 9	6567	Holder - Switch								1
40-10	7077	Screw - Binding Head								2
40-11	2509	Lockwasher								2
40-12	S-963	Nut - Hex								2
40-13	3421	Screw - Binding Head (.218")								3
40-14	7899	Washer - Internal Toothlock								3
40-15(b)	1-8842	Plug Assembly - Base								1
†	1-9366	Filter - Noise (Not Illustrated)								1

For 230 Volt Motor, order part or assembly as indicated

- (a) #7229 Resistor
- (b) #1-9592 Base Plug Assembly

† #1-9366 Noise Filter available for 115 Volt and 230 Volt Motor.

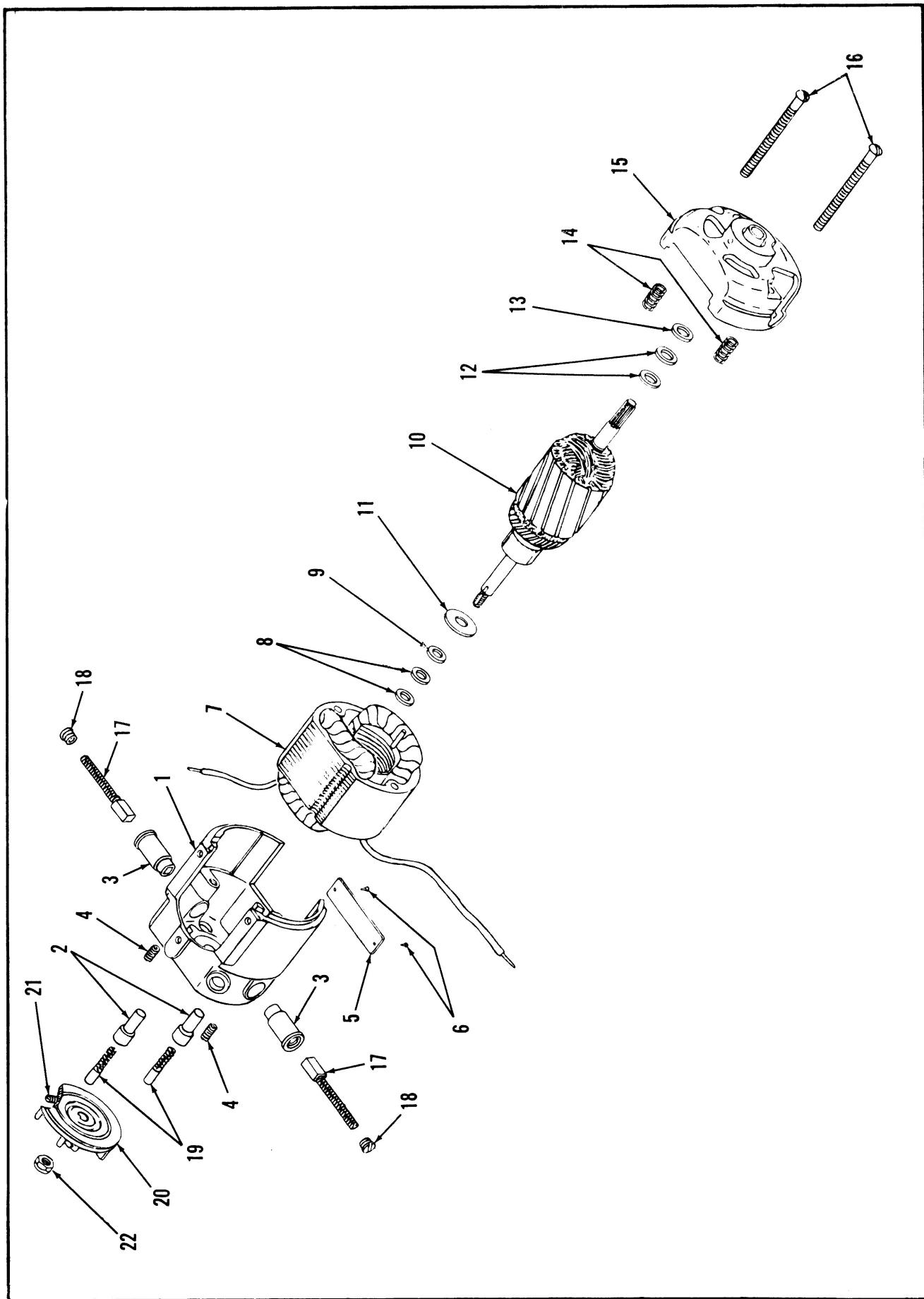


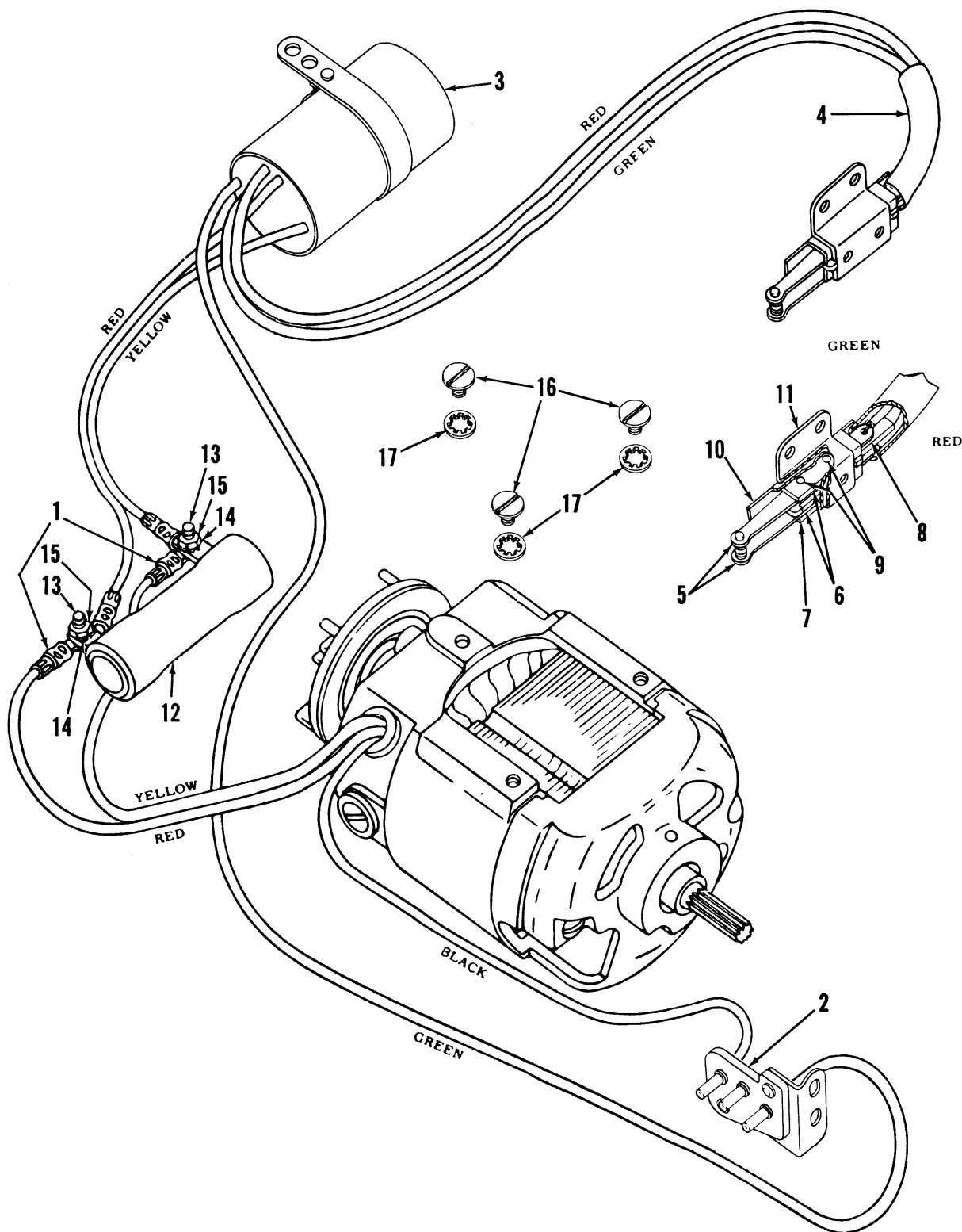
FIGURE 41

CUSTON LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
41	1-8888	Motor Assembly Complete								1
41	1-7625 *	Motor Assembly (115 Volt Bodine)								1
41- 1	1-6163	Housing Assembly - Governor End (Bodine)								1
41- 2	1-6164	Brush Holder Assembly - Governor (Bodine)								2
41- 3	1-6166	Brush Holder Assembly - Armature (Bodine)								2
41- 4	6165	Screw - Headless Set								2
41- 5	6169	Plate - Name								1
41- 6	6171	Rivet - Round Head								2
41- 7	1-6156	Field Coil and Core Assembly (115 Volt Bodine)								1
41- 8	6153	Spacer - Flat (.031" - Bakelite)								2
41- 9	6152	Spacer - Flat (.0156" - Bakelite)								1
41-10	1-6154	Armature Assembly (115 Volt Bodine)								1
41-11	6168	Slinger - Oil								1
41-12	6159	Spacer - Flat (.031" - Bakelite)								2
41-13	6158	Spacer - Flat (.0156" - Bakelite)								1
41-14	6162	Spring - Compression (Housing Fastening)								2
41-15	1-6160	Housing Assembly - Pinion End (Bodine)								1
41-16	6161	Screw - Round Head (Housing Fastening)								2
41-17	1-6181	Brush Assembly - Armature (Bodine)								2
41-18	6167	Screw - Special (Bodine Armature Brush Retaining)								2
41-19	18529	Brush - Governor								2
41-20	1-7266	Governor Assembly								1
41-21	6938	Screw - Filister Head (Speed Adjusting Screw)								1
41-22	7267	Nut - Elastic Stop (Governor)								1

* This part, or assembly, is not individually replaceable in this location. Order next higher part or assembly that is replaceable.



CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
42- 1	9512					Terminal - Insulated Wire				2
42- 2	1-8842					Plug Assembly - Base				1
42	1-8887					Capacitor Unit Complete				1
42- 3	9574					Capacitor Unit (With 5 Wires)				1
42- 4	7225					Tubing Insulation				1
42- 5	1-6712					Contact Finger Assembly				2
42- 6	6571					Insulator - Contact Finger (.063" Micarta)				2
42- 7	6965					Insulator - Contact Finger (.049" Micarta)				1
42- 8	6957					Spacer - Contact Finger (.062" Micarta)				1
42- 9	6573					Pin - Dowel (Switch)				2
42-10	8487					Insulator - Switch Holder				1
42-11	6567					Holder - Switch				1
42-12	13035					Resistor				1
42-13	7077					Screw - Binding Head (.250")				2
42-14	2509					Washer - External Tooth Lock				2
42-15	S-963					Nut - Hex (.312")				2
42-16	9533					Screw - Binding Head (.218")				3

N O T E:

The 230 Volt Bodine Motor is identical in every respect to the 115 Volt Motor listed in Figure 38 and 39 except for the following:

230 Volt Replacement for 115 Volt Part	Equivalent 115 Volt Part	Figure and Index
1-3892	1-8888	41
1-6157	1-6156	41- 7
1-6155	1-6154	41-10
7229	13035	41-13
1-9515	1-8887	40

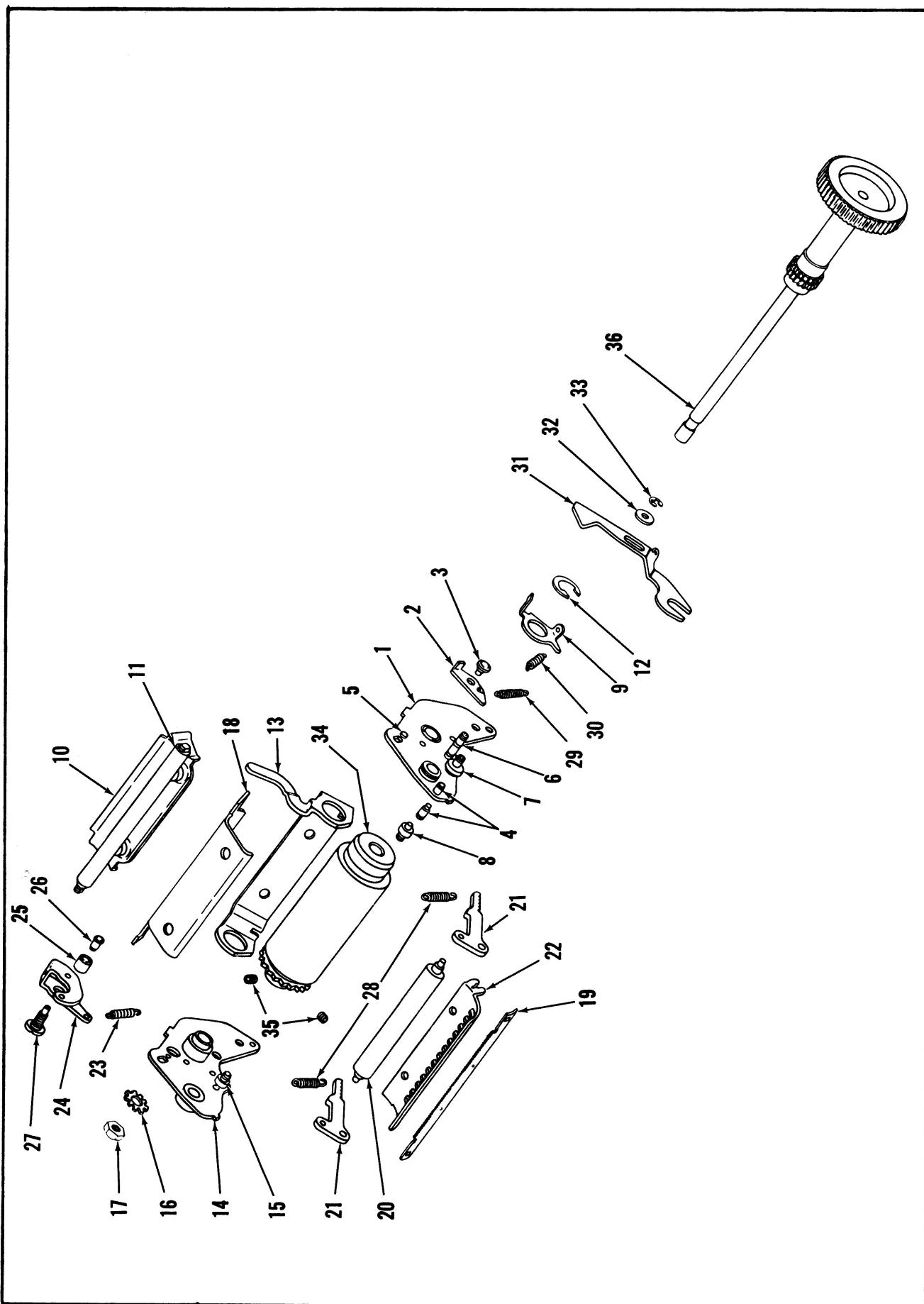


FIGURE 43

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
43	1-25632	Carriage Assembly								1
43- 1	1-8092	Frame Assembly - Carriage (Right)								1
43- 2	4789	Latch Assembly - Spacing								1
43- 3	4793	Rivet - Shoulder								1
43- 4	2363 $\frac{1}{2}$	Stud - Spring								2
43- 5	641 $\frac{1}{2}$	Stud								1
43- 6	4783	Stud - Special Spring								1
43- 7	6895	Stud - Shoulder Keeper								1
43- 8	8089	Stud - Shoulder Keeper								1
43- 9	5054	Shield - Spacing								1
43-10	8481 *	Guide - Paper								1
43-11	8090 *	Tie - Carriage Frame								1
43-12	9288	Keeper - Spring								1
43-13	8106	Lever - Feed Roll Release								1
43-14	1-8098	Frame Assembly - Carriage (Left)								1
43-15	8089	Stud - Shoulder								1
43-16	2509	Washer - External Tooth Lock								1
43-17	S-963	Nut - Hex (.312")								1
43-18	8479	Shield - Paper								1
43-19	8108	Cutter - Paper								1
43-20	8971	Shaft Assembly - Paper Feed Roller								1
43-21	8099	Hanger - Feed Roller								2
43-22	8107	Finger - Paper								1
43-23	888	Spring (.593", .020" Wire)								1
43-24	1-8097	Detent Assembly - Platen								1
43-25	6917	Roller - Counterbore								1
43-26	6918	Rivet - Shoulder								1
43-27	8093	Screw - Special Shoulder Set								1
43-28	689	Spring (.336", .016" Wire - Feed Roll)								2
43-29	157	Spring (.250", .012" Wire)								1
43-30	3547	Spring (.187", .008" Wire)								1
43-31	8478	Lever - Spacing Shield								1
43-32	3540	Spacer - Flat (.042")								1
43-33	7017	Keeper - Spring (.125")								1
43-34	1-8088	Platen Assembly								1
43-35	4181	Screw - Set								2
43-36	1-8577	Platen Shaft and Twirler Knob Assembly								1

* This part, or assembly, is not individually replaceable in this location. Order the next highest assembly that is replaceable.

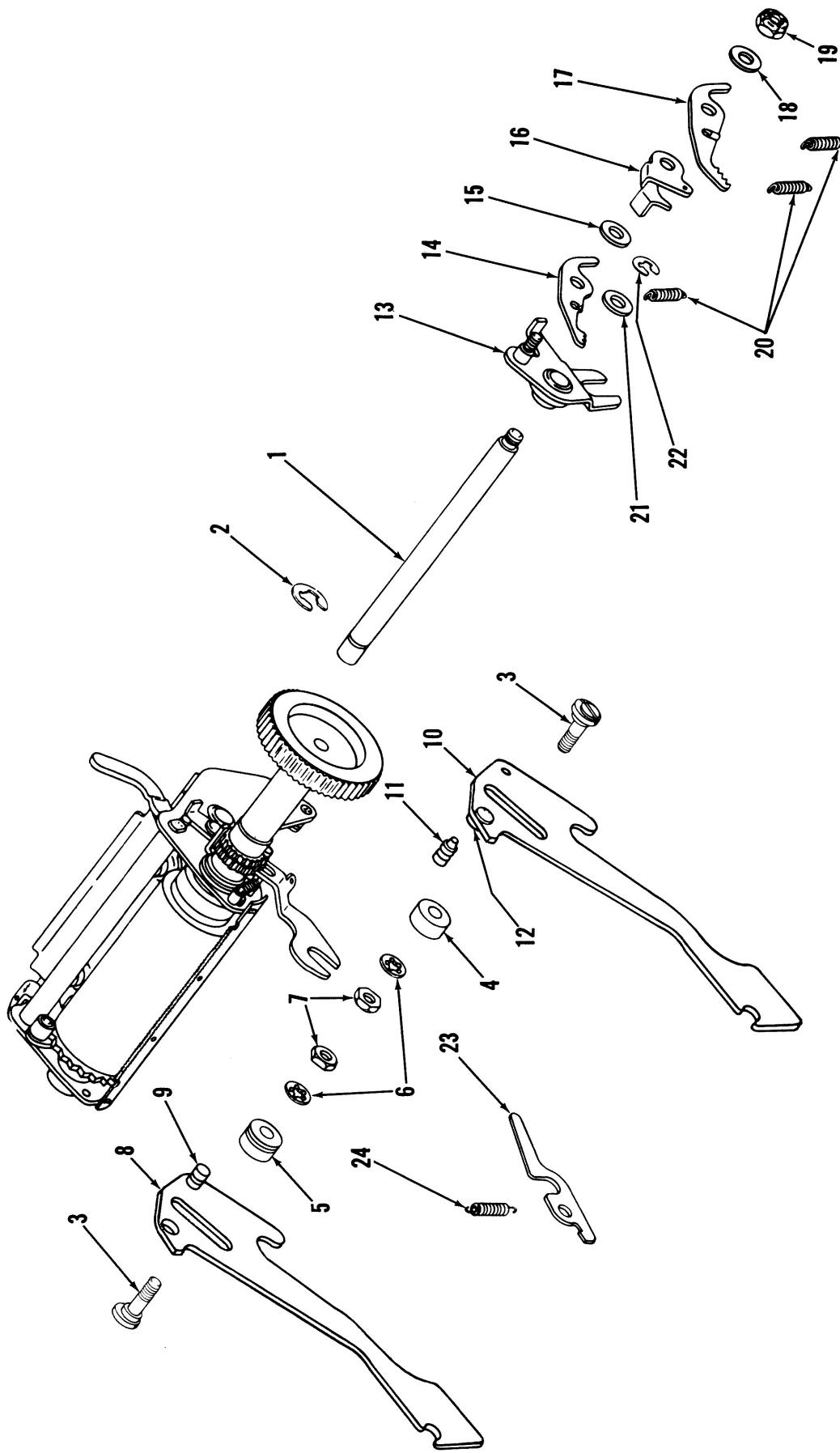


FIGURE 44

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
44- 1	8423	Shaft - Carriage								1
44- 2	7020	Keeper - Spring (.250")								1
44- 3	8053	Screw - Eccentric (Adjust Carriage Travel)								2
44- 4	8054	Spacer - Printing Link (.159") (Right)								1
44- 5	8055	Spacer - Printing Link (.219") (Left)								1
44- 6	1498 $\frac{1}{2}$	Washer - Internal Tooth Lock								2
44- 7	4798	Nut - Hex (.281")								2
44	1-12580	Link Assembly - Printing (Left)								1
44- 8	12254	Link - Printing								1
44- 9	12828	Stud - Spring								1
44	1-12255	Link Assembly - Printing (Right)								1
44-10	12254	Link - Printing								1
44-11	7993	Stud - Spring								1
44-12	8224	Stud								1
44	1-12604	Crank Assembly - Feed Pawl								1
44-13	1-6488	Crank Assembly - Feed								1
44-14	12614	Pawl - Feed Back								1
44-15	1268 $\frac{1}{2}$	Spacer - Flat (.015")								1
44-16	4599	Pawl - Spacing Shield Restore								1
44-17	4781	Pawl - Feed (Forward)								1
44-18	7367	Spacer - Flat (.042")								1
44-19	6489	Nut - Elastic Stop								1
44-20	3077	Spring (.406", .010" Wire)								3
44-21	S-966	Spacer - Flat (.048")								AR
44-21	S-282 $\frac{1}{2}$	Spacer - Flat (.008")								AR
44-21	11242	Spacer - Flat (.015")								AR
44-21	5617	Spacer - Flat (.030")								AR
44-21	7367	Spacer - Flat (.042")								AR
44-21	7519	Spacer - Flat (.005")								AR
44-21	F-1853	Spacer - Flat (.058")								AR
44-21	2966	Spacer - Flat (.063")								AR
44-22	7019	Keeper - Spring (.1875")								1
44-23	12849	Lock - Calculating Carriage								1
44-24	689	Spring (.375", .013" Wire)								1

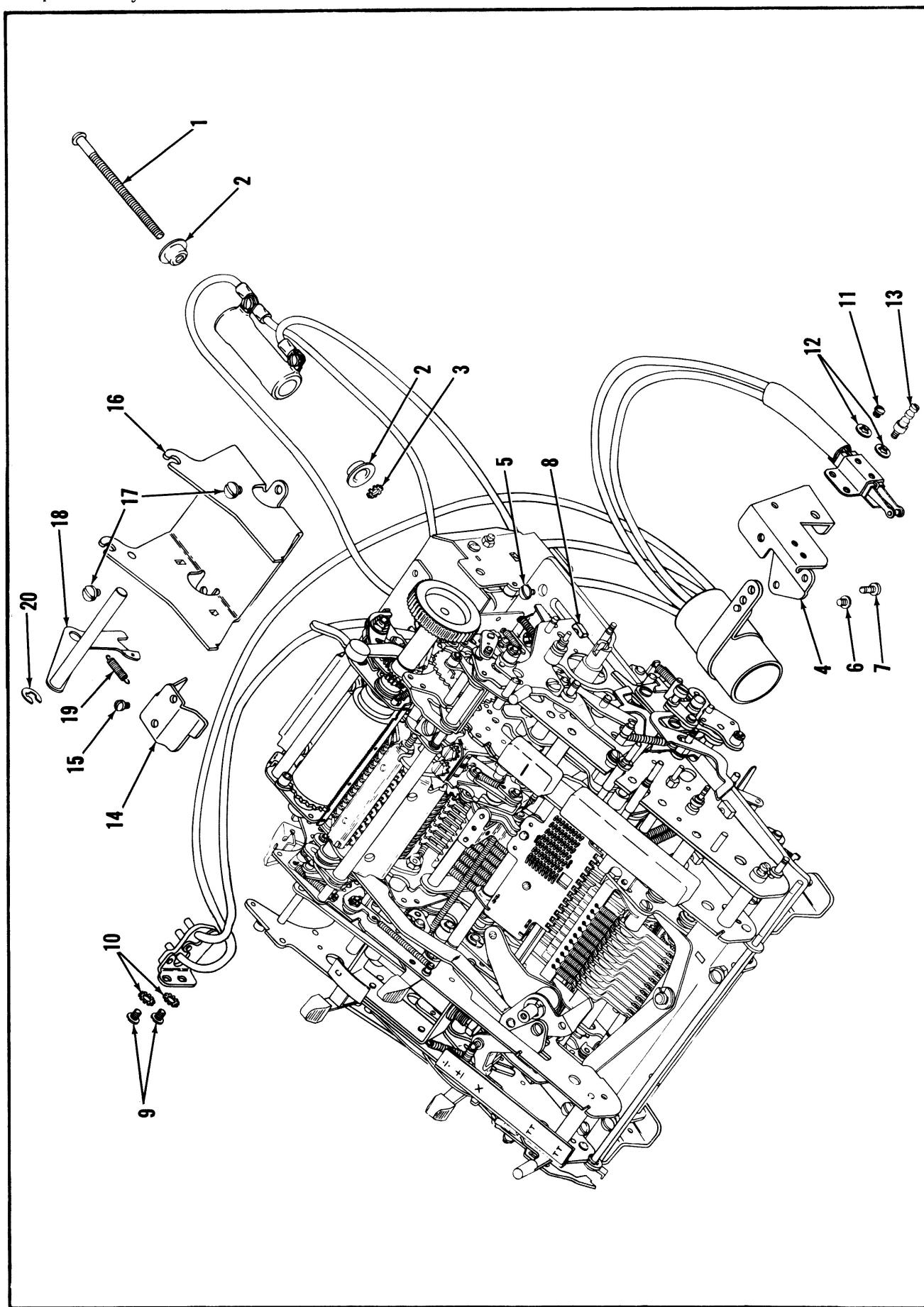


FIGURE 45

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
45- 1	2453	Screw	Round	Head (2.750")						1
45- 2	2837	Cap	- Resistor							2
45- 3	1498 $\frac{1}{4}$	Washer	- External	Tooth Lock						1
45- 4	9429	Bracket	- Switch							1
45- 5	7	Screw	Binding	Head (.187")						1
45- 6	1267	Screw	Binding	Head (.156")						1
45- 7	6663	Screw	Binding	Head (.375")						1
45- 8	5937	Nut	- Special							1
45- 9	1267	Screw	Binding	Head (.156")						2
45-10	2509	Washer	- External	Tooth Lock						2
45-11	1267	Screw	Binding	Head (.156")						1
45-12	1498 $\frac{1}{2}$	Washer	- Internal	Tooth Lock						2
45-13	12473	Stud	- Screw (Shoulder Spring)							1
45-14	7243	Cover	- Gear Box Dust							1
45-15	3781	Screw	Binding	Head (.155")						1
45-16	1-15938	Bracket	- Paper							1
45-17	813A	Screw	Binding	Head (.125")						2
45-18	1-15940	Arm	- Paper Advancing							1
45-19	245	Spring	(.625", .012" Wire)							1
45-20	7020	Keeper	- Spring (.250")							1

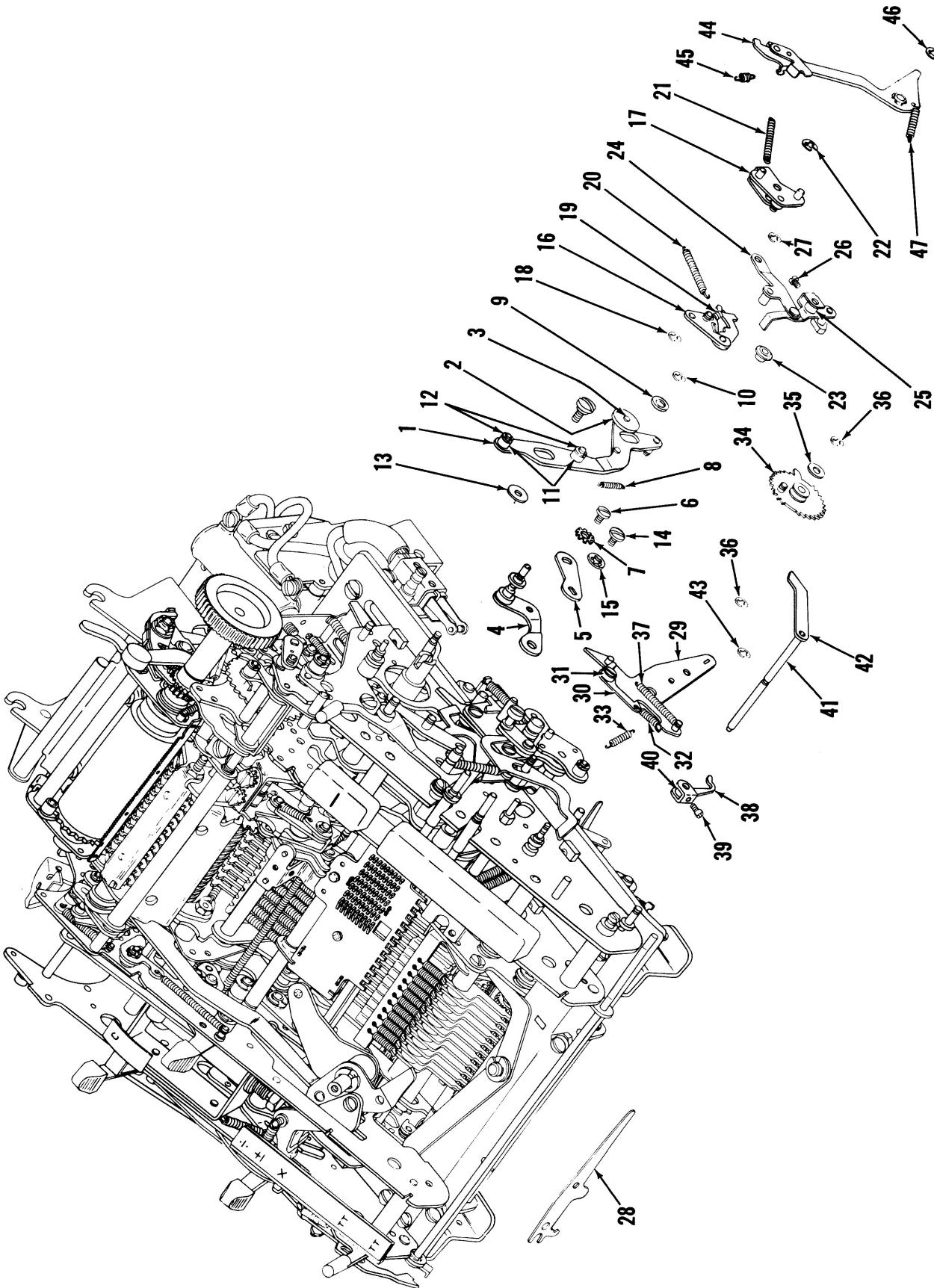


FIGURE 46

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
46	1-12712	Arm & Link Assembly - Motor Contact								1
46- 1	1-12594	Link Assembly - Motor Contact								1
46- 2	8327	Disc - Motor Contact								1
46- 3	1487-E	Screw - Binding Head (.115")								1
46- 4	1-12711	Arm Assembly - Operating Shaft								1
46- 5	12709	Arm - Operating Shaft (Right)								1
46- 6	3632	Screw - Binding Head (.187")								1
46- 7	13231	Washer - External Tooth Lock								1
46- 8	12462	Spring (.340", .020" Wire)								1
46- 9	3731	Spacer - Flat (.025")								1
46-10	7017	Keeper - Spring (.125")								1
46-11	3813	Roller (.2188")								2
46-11	3108	Roller (.1875")								AR
46-11	8609	Roller (.203")								AR
46-11	3883	Roller (.229")								AR
46-11	3885	Roller (.250")								AR
46-11	3786	Roller (.270")								AR
46-12	7017	Keeper - Spring (.125")								2
46-13	8756	Spacer - Flat (.060")								1
46-14	1243 1/2	Screw - Binding Head (.115")								1
46-15	4227	Washer - Internal Tooth Lock								1
46	1-12666	Latch & Link Assembly - Motor Contact Pivot								1
46-16	1-12478	Latch Assembly Complete - Motor Contact								1
46-17	1-12584	Pivot Assembly - Motor Contact Latch Link								1
46-18	7017	Keeper - Spring (.125")								1
46-19	3664	Spring (.281", .011" Wire)								1
46-20	9118	Spring (.572", .011" Wire)								1
46-21	4734	Spring (.459", .010" Wire)								1
46-22	7018	Keeper - Spring (.156")								1
46-23	12815	Spacer - Shoulder								1
46-24	1-12897	Arm & Link Assembly Complete - Auto-Total & Sub-Total Cam Pivot								1
46-25	3786	Roller (.270")								1
46-26	12447	Screw - Auto-Total Drive Link								1
46-27	7017	Keeper - Spring (.125")								1
46-28	12217	Arm - Index Stop Reset								1
46-29	1-12994	Release Assembly - Stop Key Plus Key Latch								1
46-30	13288 *	Pawl - Stop Ratchet Detent Auto-Division								1
46-31	13289 *	Stud - Eccentric - Stop Ratchet Detent Pawl								1
46-32	4952	Spring (.219", .008" Wire)								1
46-33	M-289	Spring (.406", .012" Wire)								1
46-34	1-12969	Ratchet Assembly - Auto-Division Stop								1
46-35	1420 1/2	Spacer - Flat (.008")								1
46-36	7017	Keeper - Spring (.125")								2
46-37	427	Spring (.687", .011" Wire)								1
46-38	12840	Arm - Calculating Stop Release Cradle								1
46-39	12447	Screw - Auto-Total Drive Link								1
46-40	3883	Roller (.229")								1
46	1-12843	Lever Assembly - Calculating Stop Release Cradle Cam								1
46-41	12842 *	Shaft - Calculating Stop Release Cradle Arm								1
46-42	12841 *	Lever - Calculating Stop Release Cradle Arm								1
46-43	7017	Keeper - Spring (.125")								1
46	1-9216	Lever & Yield Arm Assembly Complete - Total & Non-Add Lock								1
46-44	1-9215	Lever & Yield Arm Assembly - Total & Non-Add Lock								1
46-45	9214	Spring (.160", .020" Wire)								1
46-46	7018	Keeper - Spring (.156") (Adj. 13039, 9233 Keepers & 5158 (.008")), Spring (.422", .010" Wire) 9229 (.005") or S-288 1/2 (.010") Spacers)								1
46-47	2483									1

* This part, or assembly, is not individually replaceable in this location. Order the next higher part or assembly that is replaceable.

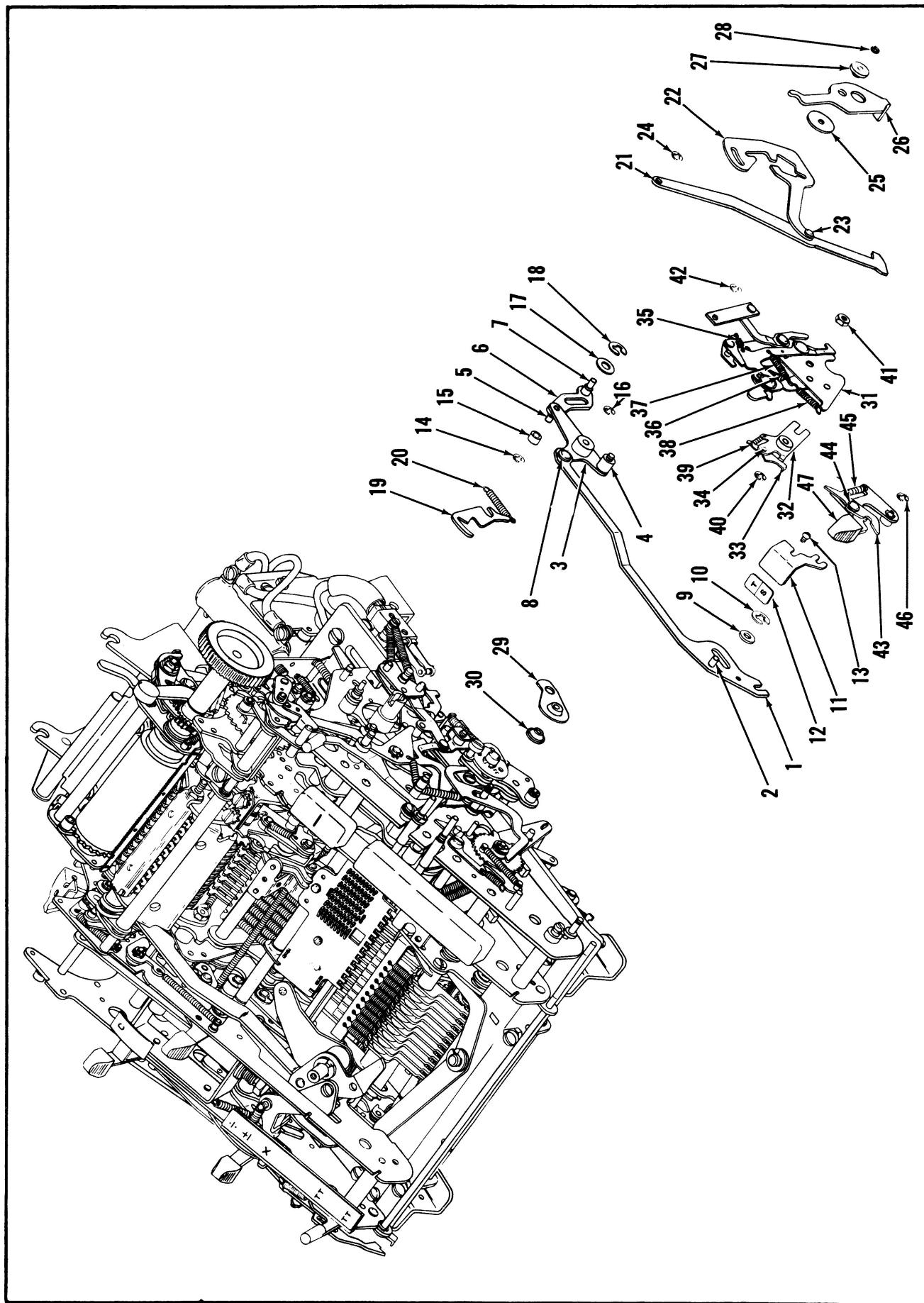
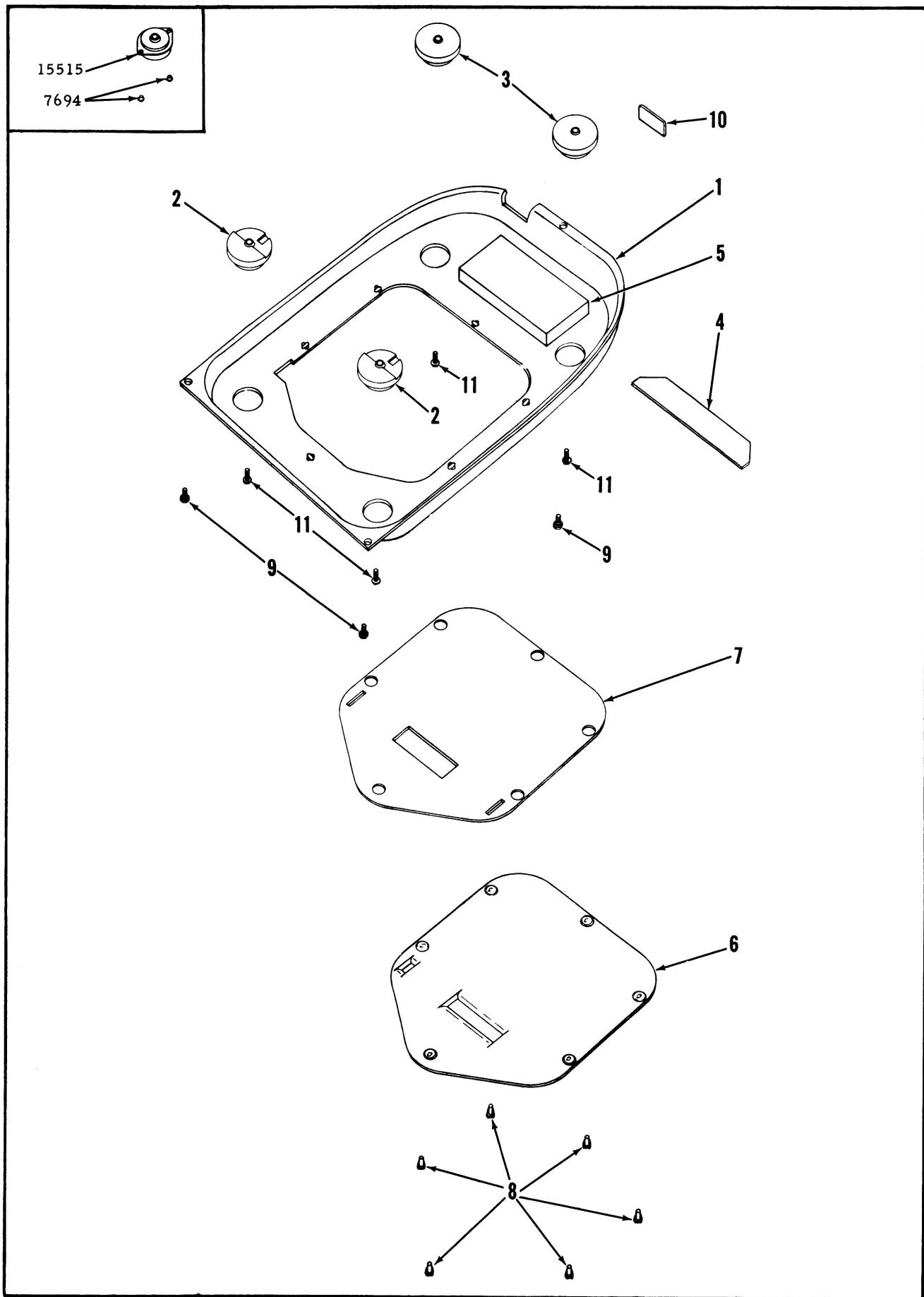


FIGURE 47

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

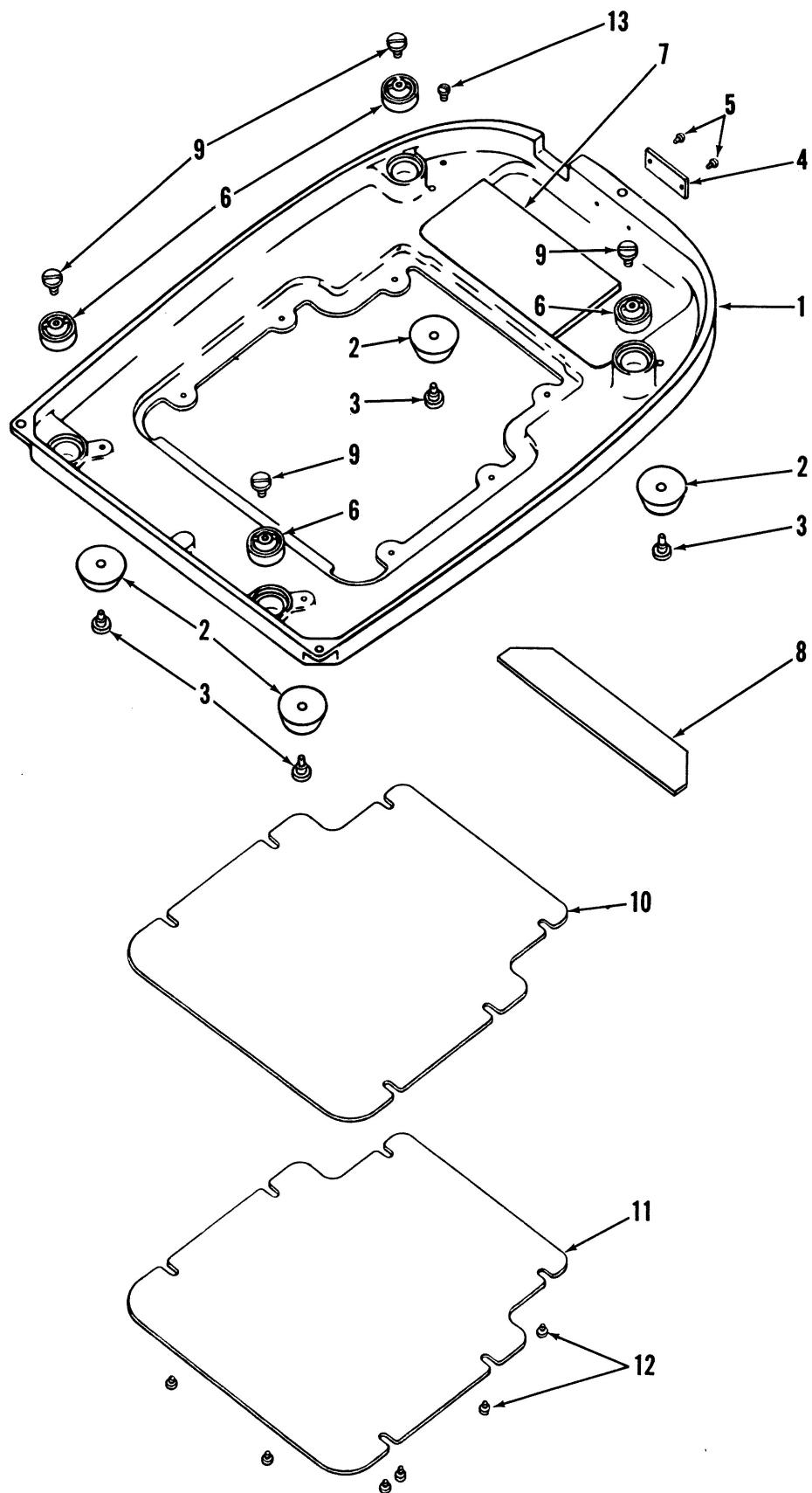
Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
47 A	1-13002	Link & Rocker Assembly Complete - Total Selection								1
47- 1	12996	Link - Total Selection Key								1
47- 2	8180	Stud - Total Selection								1
47- 3 B	1-9156	Rocker Assembly - Total Selection								1
47- 4	13001	Stud - Shoulder Keeper								1
47- 5	9170	Stud - Spring Keeper Double Shoulder								1
47- 6	12288	Link - Total Selection Key								1
47- 7	8938	Stud - Rocker Link Total Selection								1
47- 8	7883	Rivet - Shoulder								1
47- 9	5617	Spacer - Flat (.030")								1
47-10	7019	Keeper - Spring (.1875")								1
47-11 C	1-13339	Slide Assembly - Identification (Total & Sub-Total)								1
47-12 C	13338	Name Plate - Adhesive (Total & Sub-Total)								1
47-13	F-769 $\frac{1}{2}$	Screw - Round Head (.125")								1
47-14	12575	Keeper - Spring (.125")								1
47-15	9172	Roller (.1875")								1
47-16	9233	Keeper - Spring (.156")								1
47-17	3925	Spacer - Flat (.020")								1
47-18	7019	Keeper - Spring (.1875")								1
47-19 D	9173	Detent - Total Selection Rocker								1
47-20	M-789	Spring (.443", .013" Wire)								1
47 E	1-9266	Selector Assembly - Total								1
47-21	9265	Lever - Automatic Total Control								1
47-22	12291	Selector - Total								1
47-23	3588	Rivet - Shoulder								1
47-24	7017	Keeper - Spring (.125")								1
47-25	12404	Spacer - Total Selection Grid?								1
47-26	12292	Lock - Motor Contact Latch								1
47-27	12394	Spacer - Motor Contact Latch Lock Shoulder								1
47-28	13595	Keeper - Bowed (#1243 Screw formerly used)								1
47-29	12088	Inner Guide - Auto-Total Control Lever								1
47-30	12829	Bearing - Stop Key Subt. Release Arm								1
47 F	1-12989	Guide Plate Assembly Complete - Auto-Total Control Lever								1
47-31	1-12988	Guide Plate Assembly - Auto-Total Control Lever								1
47-32	1-13006	Feed Pawl Assembly - Auto-Division Stop Ratchet								1
47-33	13004	Feed Pawl - Auto-Division Stop Ratchet								1
47-34	3588	Rivet - Shoulder								1
47-35	12491	Spring (.109", .008" Wire)								1
47-36	5511	Spring (.203", .007" Wire)								1
47-37	6535	Spring (.250", .010" Wire)								1
(Continued on following page)										
A - Order #12444 Total Selector Link for Multiplier Models below serial #1301-619.										
B - Order #1-12471 Total Selector Rocker Assembly Complete for Multiplier Models below serial #1301-619.										
C - Order #1-13020 Identification Slide and #13021 Adhesive Name Plate for machines below serial #1532-929.										
D - Order #12286 Total Selection Rocker Detent for Multiplier Models below serial #1301-619.										
E - Total Selector Assembly #1-9266 can only be used in conjunction with #1-13073 Auto-Total Control Shaft Assembly. Refer to Figure 26.										
F - Order #1-13129 Auto-Total Control Lever Guide Plate Assembly Complete for Multiplier Models.										



CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
(Continued from preceding page)										
47-38	157									1
47-39	3547									1
47-40	7017									1
47-41	4226									1
47-42	7017									1
47	1-12848									1
47-43	12847									1
47-44	S-8791 ₂ - 1									1
47-45	3593									1
47-46	7017									1
47-47	13348									1
48- 1 A	1-13296									1
48- 2	13626									2
48- 3	9605									2
48- 4	6964									1
48- 5	12777									1
48- 6	13295 §									1
48- 7	9452									1
48- 8	9454									6
48- 9	15542									3
48-10	9402									1
48-11	2882									4
<p>A - Base Cover Assembly #1-13296 is used on machines above serial #1581-661. For machines below this serial number, refer to Figure 48A.</p>										
<p>§ The inspection cover carries the machine serial number; consequently, the old inspection cover must be returned to the factory when replacement is required.</p>										



CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
48A	1-13357	Support Assembly	Base (Brown) (#1-12652, Green)							1
48A- 1	13356	Support - Base								1
48A- 2	12618	Foot - Rubber								4
48A- 3	12617	Rivet - Shoulder								4
48A- 4	6996	Plate - Volts & Cycles (115 Volts)								1
48A- 5	8514	Screw - Round Head (.125")								2
48A- 6	8800	Mount - Rubber								4
48A- 7	12777	Pad - Felt								1
48A- 8	6964	Pad - Bumper								1
48A- 9	7097	Screw - Binding Head (.218")								4
48A-10	12615	Felt - Base Support								1
48A-11	12616 §	Cover - Base Support								1
48A-12	3632	Screw - Binding Head (.187")								6
48A-13	3781	Screw - Binding Head (.115")								1

§ The base support cover carries the machine serial number; consequently, the old base support cover must be returned to the factory with the order for a new one.

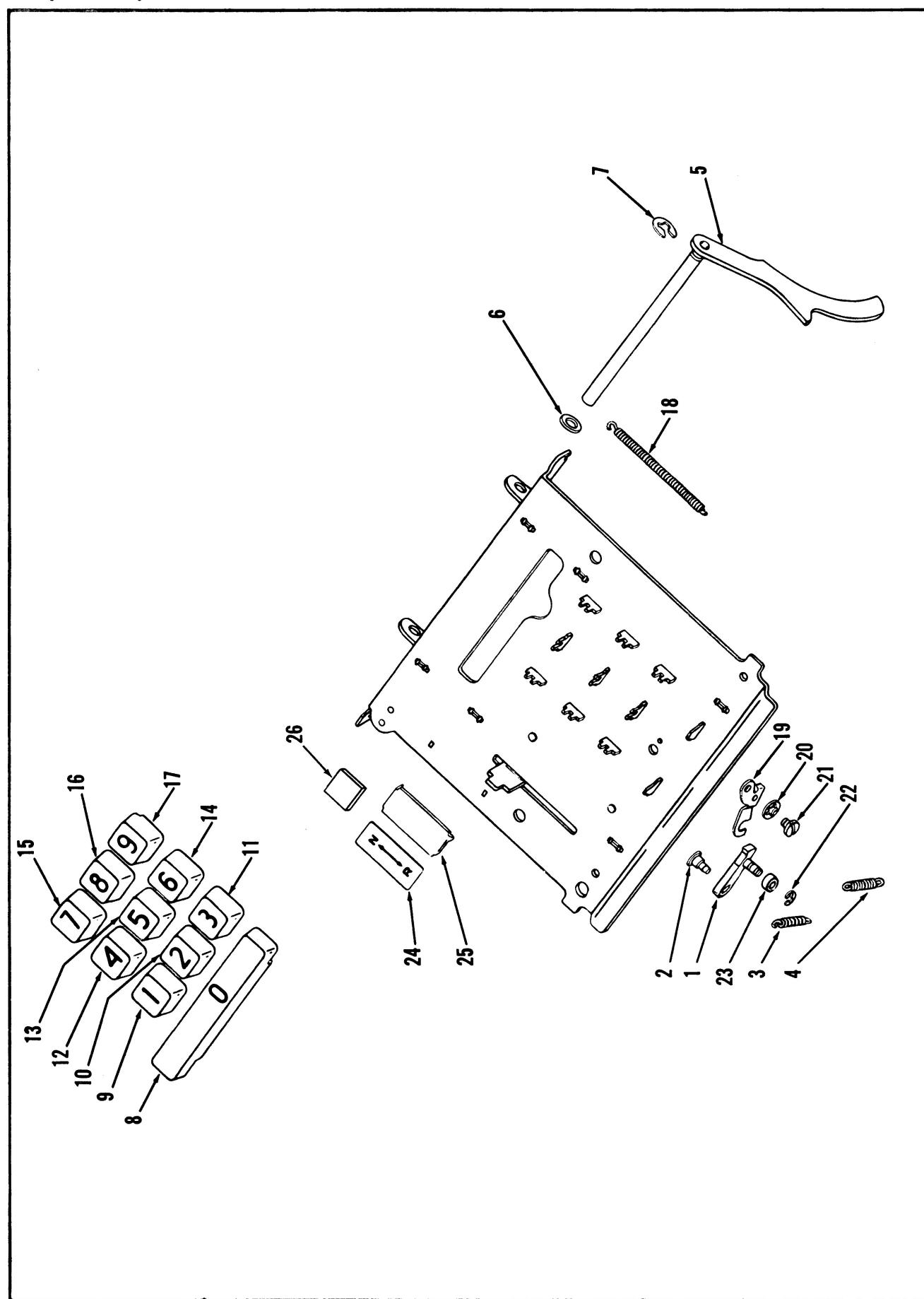


FIGURE 49

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
49 A	1-13389	Keyboard Assembly Complete (Brown Buttons) (#1-12456 Green Buttons)								
49- 1	1-9529	Pawl Assembly - Escapement								1
49- 2	9517	Rivet - Shoulder								1
49- 3	2483	Spring (.375", .008" Wire)								1
49- 4	481	Spring (.406", .012" Wire)								1
49- 5	1-8869	Lock Assembly - Keyboard								1
49- 6	S-966	Spacer - Flat (.0485")								1
49- 7	7019	Keeper - Spring (.1875")								1
49- 8	13345	Button - Key (Brown "0") (#8240 Green "0")								1
49- 9	16761	Button - Key (Brown "1") (#8241 Green "1")								1
49-10	16762	Button - Key (Brown "2") (#8242 Green "2")								1
49-11	16763	Button - Key (Brown "3") (#8243 Green "3")								1
49-12	16764	Button - Key (Brown "4") (#8244 Green "4")								1
49-13	16765	Button - Key (Brown "5") (#8245 Green "5")								1
49-14	16766	Button - Key (Brown "6") (#8246 Green "6")								1
49-15	16767	Button - Key (Brown "7") (#8247 Green "7")								1
49-16	16768	Button - Key (Brown "8") (#8248 Green "8")								1
49-17	16769	Button - Key (Brown "9") (#8249 Green "9")								1
49-18	4368	Spring (1.625", .008" Wire)								1
49-19	9477	Arm - Escapement								1
49-20	2509	Lock Washer								1
49-21	12640	Screw								1
49-22	13078	Keeper - Spring								1
49-23	7622	Roller								1
49-24	13323	Name Plate - Repeat Non-Add								1
49-25	13318	Bracket - Repeat Non-Add								1
49-26	13620	Cushion - Keyboard								1

A - For machines between serial #1532-929 and #1772-681, order #1-13331 Keyboard Assembly.

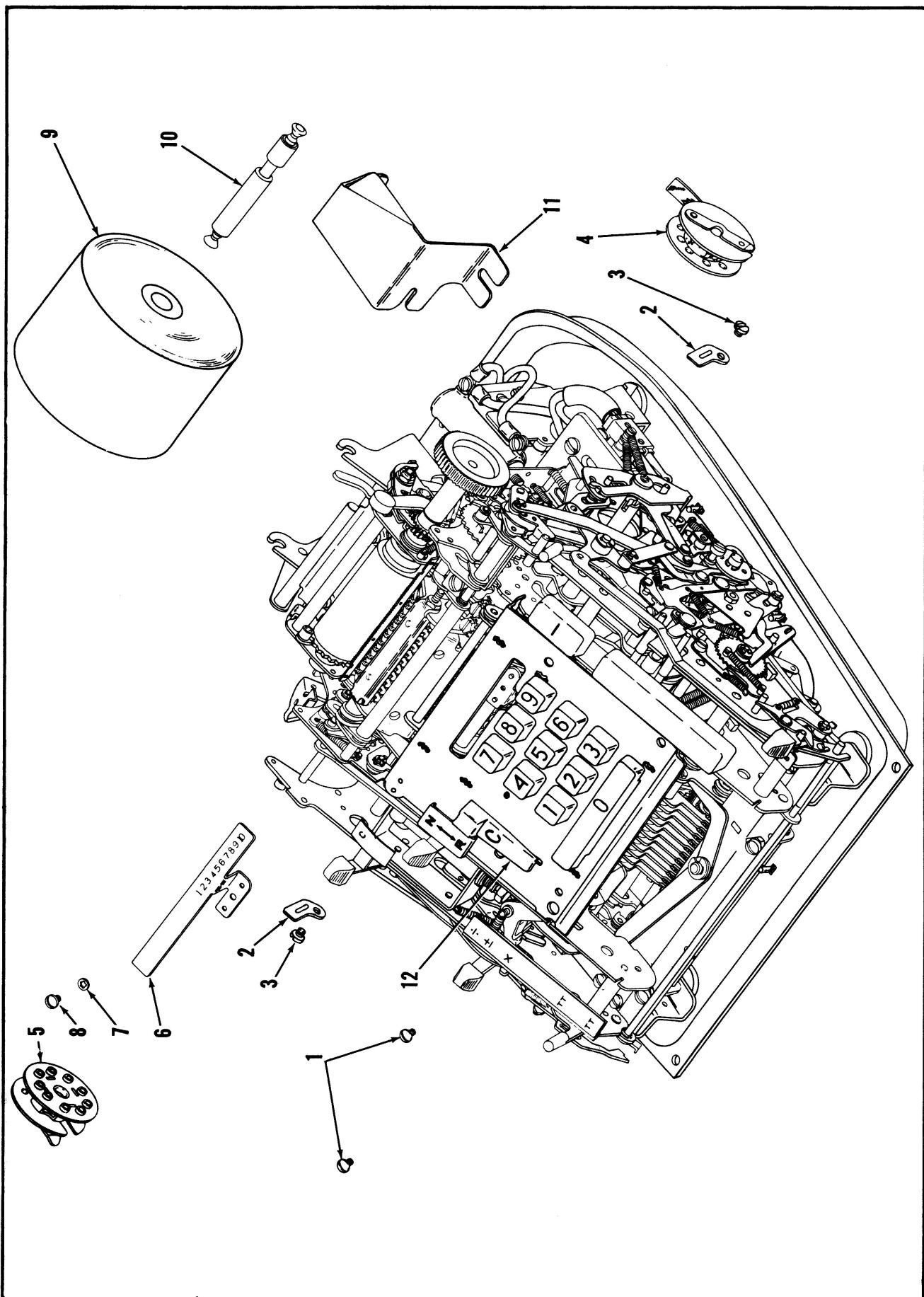


FIGURE 50

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
50- 1	3632	Screw - Binding Head (.187")								2
50- 2	8779	Clip - Keyboard								2
50- 3	3781	Screw - Binding Head (.115")								2
50- 4	1-5988 §	Ribbon & Spool Assembly (Used only at time of First Assembly)								1
50- 5	1-5987	Spool Assembly - Ribbon								2
50- 6	1-16814	Indicator Assembly - Column (Brown) (#1-8613 Tan)								1
50- 7	1498 $\frac{1}{2}$	Washer - Internal Tooth Lock								1
50- 8	1243 $\frac{1}{2}$	Screw - Binding Head (.187")								1
50- 9	792	Roll - Paper								1
50-10	1-6898	Mandrel Assembly - Paper								1
50-11	13036	Cover - Resistor								1
50-12	13346	Knob - Correction (#8250 Green)								1
N O T E :										
§ For service requirements only, use #1-4176. #1-4176 is one dozen individually boxed ribbon assemblies packed in a carton; each ribbon assembly consisting of one spool wound with ribbon.										

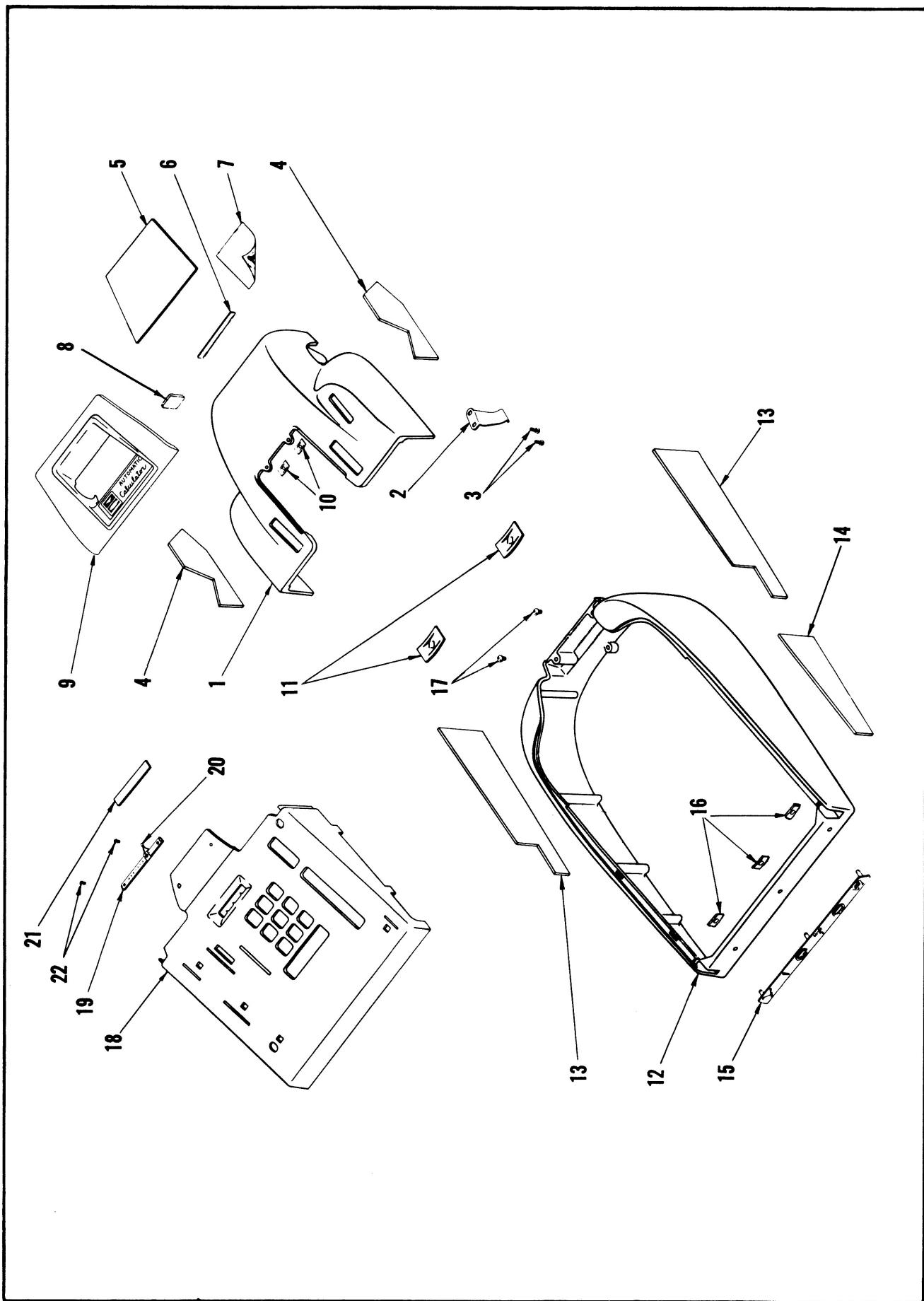


FIGURE 51

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
51 A	1-13390-1									1
51	1-6286	Case Assembly Complete (Brown)								1
51- 1	1-13617	Hood Assembly Complete (Brown)								1
51- 2	8543	Hood Assembly (Brown)								1
51- 3	8547	Snap - Hood								1
51- 4	8789	Screw - Round Head								2
51- 5	8790	Pad - Felt								2
51- 6	16806	Pad - Felt								1
51- 7	7805	Plate - Name								1
51- 8	16680	Label - Ribbon Instruction								1
51- 9	13317	Emblem - Hood								1
51-10	14048	Escutcheon								1
51-11	13319	Nut - Speed								2
51	1-6287	Nut - Speed								2
51-12	13300	Case Sub-Assembly Complete (Brown)								1
51-13	8791	Case Sub (Brown)								1
51-14	12695	Pad - Felt								2
51-15	13322	Pad - Felt								1
51-16	14048	Plate - Name								1
51-17	13619	Nut - Speed								3
51-18 B	13391	Screw - Pan Head								3
51-19	13343	Cover - Keyboard (Brown)								2
51-20	13344	Guide - Decimal Indicator								1
51-21	8781	Slide - Decimal Indicator								1
51-22	9499	Pad - Felt								1
51-23	8838 ‡	Rivet								2
51-24	13372 ‡	Cord								1
		Cover - Machine								1
<p>A - For machines above serial #1772-681, order the following Cases. Model 75-85-54 Case #1-13390-1; Model 74-85-54 Case #1-13390-2; Model 73-85-54 Case #1-13390-4; Model 72-85-54 Case #1-13390-3.</p> <p>For machines between serial #1532-929 and #1772-681, order the following Cases. Model 75-85-54 Case #1-13332; Model 74-85-54 Case #1-13333; Model 73-85-54 Case #1-13335; Model 72-85-54 Case #1-13334.</p> <p>For machines below serial #1532-929, refer to Figure 48A.</p> <p>B - For machines above serial #1772-681 order the following Keyboard Covers. Model 75-85-54 Cover #13391; Model 74-85-54 Cover #13392; Model 72-85-54 Cover #13393; Model 73-85-54 #13394.</p> <p>For machines between serial #1532-929 and #1772-681 order the following Keyboard Covers. Model 75-85-54 Cover #13313; Model 74-85-54 Cover #13314; Model 72-85-54 Cover #13315; Model 73-85-54 Cover #13316.</p>										
<p>‡ Not illustrated</p>										

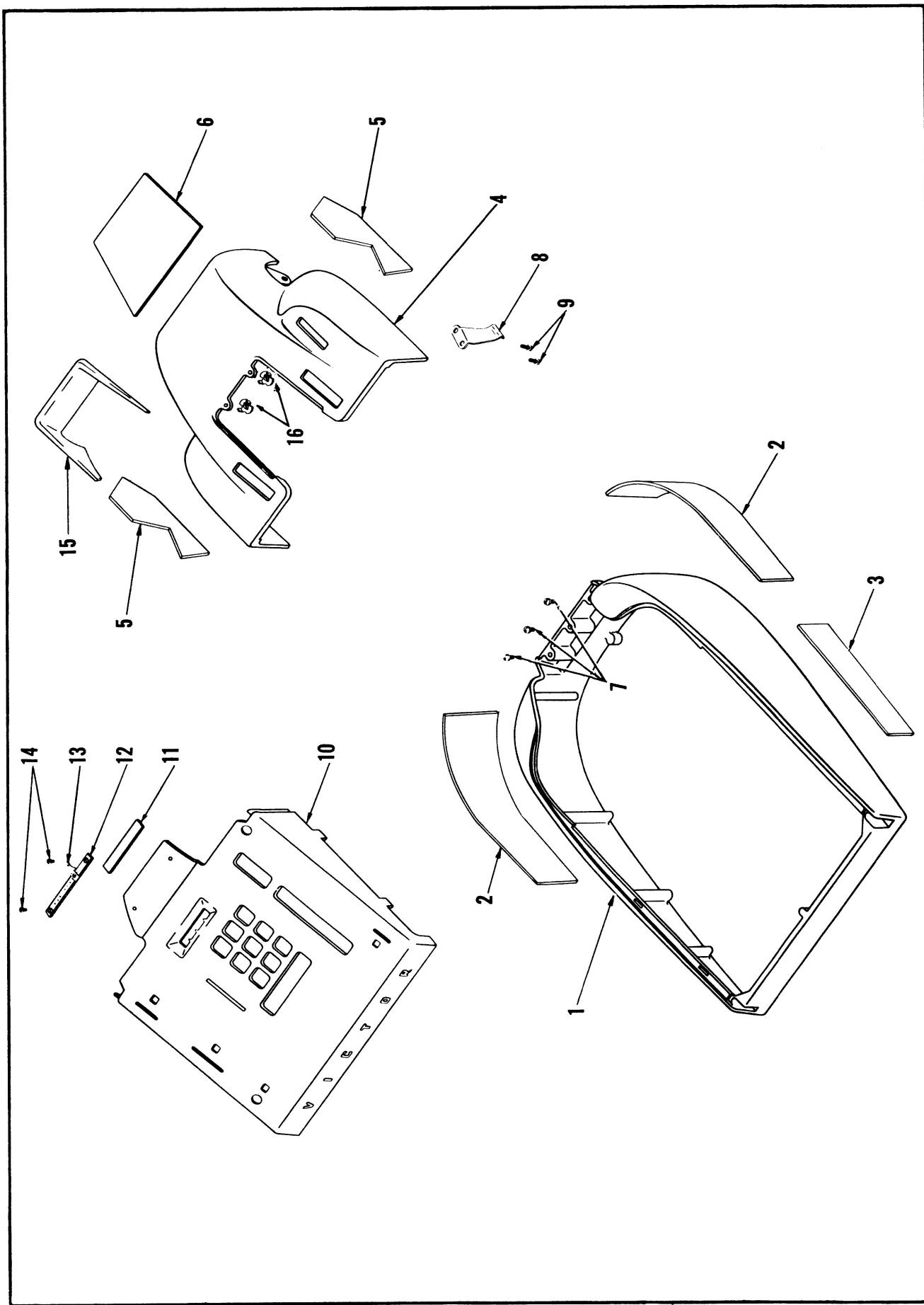


FIGURE 51A

CUSTOM LINE
PRINTING CALCULATORS

Section II
Group Assembly Parts List

Figure and Index	Part Number	Part Name								No. Req. per Assembly
		1	2	3	4	5	6	7	8	
51A A	1-12676	Case Assembly Complete (Green)								1
51A B	1-6210	Case Sub- Assembly Complete (Green)								1
51A- 1	1-12674 *	Case Sub-Assembly								1
51A- 2	8791	Pad - Case (Rear)								2
51A- 3	12695	Pad - Case								1
51A	1-6203	Hood Assembly Complete (Green)								1
51A- 4	1-9314 *	Hood Assembly (Green)								1
51A- 5	8789	Pad - Hood (Side)								2
51A- 6	8790	Pad - Hood (Top)								1
51A- 7	12730	Screw - Binding Head (.250")								3
51A- 8	8543	Snap - Hood (Right)								1
51A- 9	8547	Screw - Round Head (.250")								2
51A-10C	13152	Cover - Keyboard (Tan)								1
51A-11	8781	Cushion - Keyboard								1
51A-12	8598	Guide - Decimal Indicator								1
51A-13	8597	Slide - Decimal Indicator								1
51A-14	8599	Screw - Oval Head (.187")								2
51A-15	8567	Escutcheon								1
51A-16D	7744	Nut - Speed								2

A - Order #1-12755 Case Assembly Complete for Multiplier Models below serial #1301-619.

B - When ordering #1-6210 Case Sub-Assembly Complete, please specify with or without hinges. Shoulder Screw #8541, Spring Washer #6899, Flat Spacers #3749 and #8533, and Hex Nut #S-963 were formerly used as attaching parts between the hood and Case Sub-Assembly.

C - For machines between serial #1419-000 and #1532-929 order the following Keyboard Covers. Model 75-85-54 Cover #13152; Model 74-85-54 Cover #13164; Model 73-85-54 Cover #13206; Model 72-85-54 Cover #13205.

For machines below serial #1419-000 order Keyboard Cover #13000 for Model 75-85-54 and Cover #13126 for Model 74-85-54.

When ordering #13000 Keyboard Cover, specify with or without opening for Calculating Unit Indicator #1-13032.

Order #1-12754 Keyboard Cover for Multiplier Models below serial #1301-619.

D - Binding Head Screw #3310 was formerly used to secure the Escutcheon to the Hood.

* This part, or assembly, is not individually replaceable in this location. Order the next highest assembly that is replaceable.

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90	27-15 28-15	585	10-22 17-36	F-1143 $\frac{1}{4}$	16-18	1499 $\frac{1}{4}$	19-34 23-18
92	19-16	587	37-31	1182	21-4	F-1832 $\frac{1}{2}$	21-26
157	34-14 43-29 47-38	641 $\frac{1}{2}$ S-681 $\frac{1}{2}$	43-5 16-5 20-15	1243 $\frac{1}{2}$	24-21 34-13 46-14 50-8		24-45 26-31 35-16
237	17-4	689	34-14 35-27	1267	18-13 45-6	F-1846 $\frac{1}{2}$	8-16
245	12-7 35-33 45-19		43-28 44-24		45-9 45-11	F-1853	
253	26-16	F-769 $\frac{1}{2}$	5-22 26-30 47-13	1268 $\frac{1}{2}$	13-10 18-32 26-14	1918 $\frac{1}{2}$	26-14
255	18-11 23-15	F-781 $\frac{1}{2}$	2-9 4-21		37-29 44-15	2113	16-36
S-282 $\frac{1}{2}$	21-26 21-44 22-8 26-14 27-17 28-14 37-29 44-21	M-789	16-29 17-40 30-11 47-20	1278 $\frac{1}{2}$ 1281 1290 $\frac{1}{4}$	10-21 19-32 17-33 21-40 22-8 26-14 27-17 28-14 35-13 37-29	2101 $\frac{1}{4}$ 2229 2267 2362 $\frac{1}{2}$ 2363 $\frac{1}{2}$ 2423 $\frac{1}{2}$	5-7 19-23 39-1 1-11 16-13 10-6 43-4 36-6
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